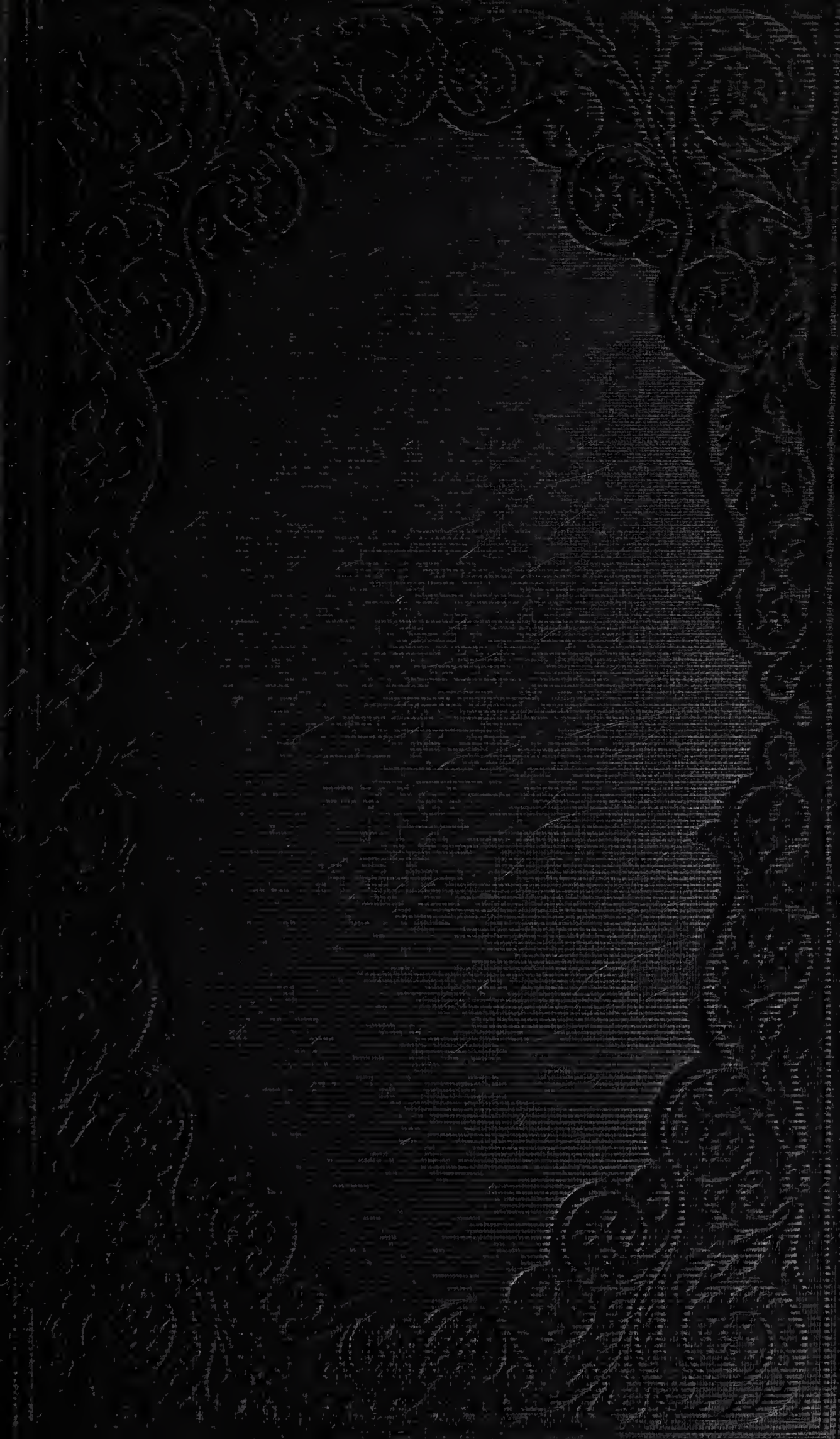

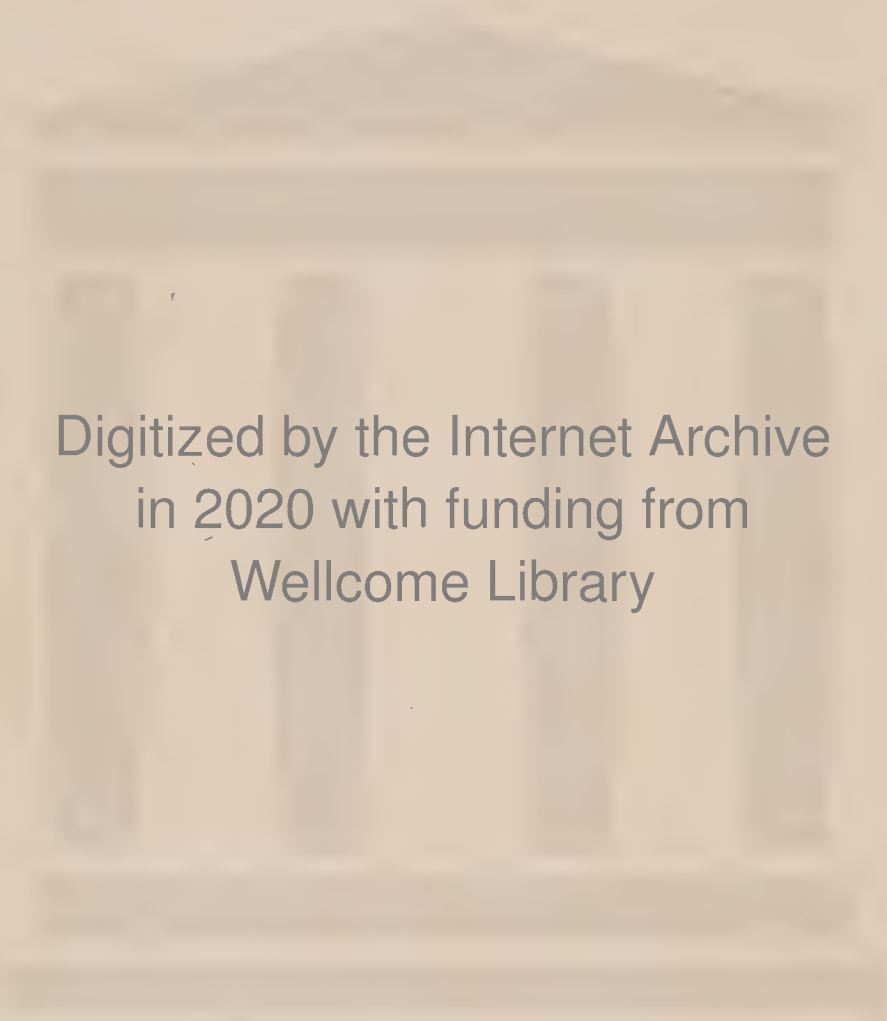
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BRAITHWAITE'S RETROSPECT.

VOL. XCIV. JULY–DECEMBER, 1886.

EXETER
QUEEN ST
DISPENSARY

THE

RETROSPECT OF MEDICINE:

BEING

A HALF-YEARLY JOURNAL

CONTAINING A RETROSPECTIVE VIEW OF EVERY DISCOVERY AND PRACTICAL IMPROVEMENT IN THE MEDICAL SCIENCES.

EDITED BY

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AN ABSTRACT OF THE MOST PRACTICAL ARTICLES IN THIS VOLUME, WITH OTHER SHORT ARTICLES FROM THE MEDICAL JOURNALS, SHOWING THE MOST IMPORTANT INDICATIONS OF TREATMENT PUBLISHED BY DIFFERENT WRITERS DURING THE HALF-YEAR, ARRANGED ALPHABETICALLY.

AFFECTIONS OF THE SYSTEM GENERALLY.

CYSTIC DISEASE OF BREAST.—*Treatment.*—In all cases in which the true cystic nature of the tumour is doubtful an exploratory puncture with a small aspirating needle should be made, not only for diagnostic purposes, but with the reasonable prospect of retarding if not arresting the progress of the disease; and this hope may reasonably exist should the disease consist of the dilatation of a single duct, for I can recall not a few examples of what turned out to be simple serous cysts of the breast which had been tapped for diagnostic purposes in which after the lapse of years no return of the trouble has taken place. When a simple tapping has proved ineffectual or is inapplicable, an incision into the cyst, its free drainage, and healing by granulation, may bring about a cure, but these means should only be adopted when the cysts on being incised have been found quite free from all signs of intracystic growths and the cyst is single. When more than one cyst exists in a lobe this treatment is hardly applicable, and the safer practice is to dissect out the cysts with enough of the surrounding gland to make it reasonably probable that the disease has been wholly removed. When the cyst contains an intracystic growth it must be freely excised, and should more than one such cyst be made out the whole gland had better be extirpated, for all proliferating cysts are prone to grow, and the breast-glands of such as contain them are rarely only locally implicated. I have on many occasions after the removal of a cystic sarcomatous tumour found such portions of the gland as seemed to be healthy the seat of the same disease only in miniature, and this fact fairly suggests that the disease, although palpable in one part and apparently local, is really a general gland disease, and that under such circumstances the whole gland had better be excised. In the more solid forms of cystic sarcoma and cystic carcinoma, early excision is a rule of practice which should never be deviated from. In exceptional cases a cyst inflames and suppurates; such should be treated as an

ordinary abscess, by incision, antiseptic irrigation, and drainage. (Mr. Thomas Bryant, Guy's Hospital Reports, 1886, p. 445.)

[Mr. Bryant's remarks on the Diagnosis of Cystic Tumours of the Breast will be found at p. 129.]

Diphtheria.—*Treatment.*—I assume that the case is treated in its early stage—the only stage in which local treatment can really avail; for when once the blood becomes impregnated with the fungoid micrococcus or bacteria of diphtheria, the poison is then deposited in organs, such as the trachea or the bronchi, beyond the reach of local treatment; and it becomes a question whether the constitution of the patient can eliminate the poison, and nature, generous nourishment, iron, &c., once more re-establish convalescence. In the first place, in any affection of the throat I lose no time in examining it, and watch carefully for the unmistakable washleather-like creeping deposit of diphtheria, or the symptoms of its sister diseases, follicular tonsillitis, croup, and scarlatina; if it turns out to be diphtheria, I give a mixture containing six drachms of the tincture of the perchloride of iron to five ounces of sweetened water, and at this strength, *undiluted*, I insist that the child shall take every hour for twelve hours a dessertspoonful (if the patient is older or an adult, a much larger dose), and that this dose shall be repeated, whether vomiting occurs or not. At this strength I find in that time, or a few hours more, that the growth has a shrivelled look and its vitality is destroyed. I then reduce the dose and extend the intervals, and, as I believe, with many others, that iron has some specific power of arresting the septic action of the poison in the system, continue it for two or three days or longer, keeping up the strength with strong beef-tea, milk, and port wine; if these cannot be taken, I use an enema every four hours of equal parts of beef-tea, port wine, and cream or milk. The advantages of this treatment over the local application of caustics is that it reaches every part of the pharyngeal tract likely to be affected, and is, as I mentioned before, strong enough, given in this way, to destroy the vitality of the fungus of diphtheria; and let me here impress the absolute necessity of keeping a thorough draught of fresh air constantly passing through the room, for how can it be expected that a blood poison can be eliminated if it is continually breathed again? As well might one attempt to resuscitate a person dying from inhaling a poisonous gas without first taking the sufferer into the open air. It is needless to say that this treatment in the generality of cases should be supplemented by giving barley-water, sweetened in the case of children, containing two drachms of chlorate of potash or other antiseptic drug, to the pint, but I prefer chlorate of potash, for it is not unpleasant to the taste, and children will drink it readily. (Mr. N. E. Davies, Lancet, April 10, p. 684.)

Diphtheria.—Bromine.—Dr. P. Hesse, of Griefswald, calls attention to the fact that bromine, as a local medicament in diphtheria, has held its own for some twenty years better than any other remedy, and recommends for inhalation the following solution: pure bromine, potassium bromate, āā 1 to 2 parts; distilled water, 400 parts. Without regarding bromine as a specific, Hesse maintains that, properly applied, it is less fallible than other medicaments. Certain precautions and limitations in the application of the treatment are indicated, viz.: 1. Treatment to be instituted as early as possible. 2. Direct application by the brush should not be made. 3. The frequency of application, and the concentration of the solution used for inhalation should be conditioned by the severity of the case, and the degree of congestion induced in the pharyngeal mucous membrane. 4. The solution should always be fresh, and the treatment should be accompanied by ice-cold applications to the neck. 5. The method is contraindicated in laryngeal diphtheria, in bronchitis, and in affections of the lungs. (Medical News, May 1, p. 487.)

Erythema Nodosum and Acute Rheumatism.—At the Clinical Society, April 9th, Dr. Mackenzie read a paper on erythema nodosum, specially dealing with its connection with rheumatism. He narrated the case of a young woman who was admitted into the London Hospital with erythema nodosum. Whilst under treatment for this, symptoms of a moderately severe attack of acute rheumatism developed, with doubtful signs of heart affection. Two slight relapses of the rheumatic symptoms occurred. The discrepant statements of writers on the subject are well known, and the occurrence of this case led the author to collect data for forming an opinion as to the connection between erythema nodosum and rheumatism. By the assistance of Drs. Hadden, Carrington, Arthur Davis, and James Anderson, particulars of 108 cases of erythema nodosum were collected from the records of St. Thomas's, Guy's, St. Bartholomew's, and the London Hospitals. Analysis of these cases gave the following facts:—There were 18 males and 90 females, or five females to one male. The greatest incidence of the disease was found to occur in the second and third decennia, next in the fourth and first decennia, whilst few occurred in and after the fifth decennium. The age incidence is very similar to what occurs in rheumatism. In seventeen cases, or 15·7 per cent., there were present well-marked symptoms of acute or subacute rheumatism. In four of these cases the rheumatism was stated to have preceded the erythema, in two the erythema preceded the rheumatism, in two the erythema and rheumatism appeared concurrently, and in the remainder the sequence was not recorded. Besides these cases, there were seventeen others in which arthritic pains were present, apparently distinct from

the pain in the limbs in which the eruption was present. In three of these there was a history of previous rheumatism, in four there was evidence of heart disease or disorder, besides sore throat in the attack in two, and a family history of rheumatism in two. Though the evidence of the rheumatic nature of these last seventeen cases is not so strong as in the first seventeen, the author believed that they ought really to be included in the rheumatic category. If this were done it gave 17 + 17 = 34, or 31·4 per cent., with symptoms of rheumatism occurring with erythema nodosum. Further, in twelve cases in which no rheumatic symptoms accompanied the attack of erythema the patient had previously suffered from rheumatism. In six cases recurrences were noted. In one case the patient died in the sixth attack of acute rheumatism, and had erythema nodosum with three of the attacks. Sore-throat (including two cases of tonsillitis), which so often precedes and accompanies acute rheumatism, was present in twelve cases—though not specially inquired for; and in eleven cases there was a family history of rheumatism. A matter of great importance in establishing the connection between erythema nodosum and rheumatism is the condition of the heart. Some important evidence was given. In twenty cases some definite lesion was present; ten of these are included in the group of cases in which rheumatism accompanied the attack of erythema; but in ten others, and three doubtful lesions, there was no arthritis accompanying the attack, though in some there had been previous rheumatism. Most important of all was the fact that a heart lesion, presumably endocarditis (with in one case pericarditis), developed in five cases during the attack of erythema nodosum. In three of these there was accompanying affection of the joints, whilst in two the joints were not affected in the attack. The author submitted that these facts justified the following conclusions:—1. That erythema nodosum is frequently associated with definitely rheumatic symptoms—*e.g.* arthritis, sour sweats, sore-throat, &c. 2. That heart disease (endocarditis) may arise during an attack of erythema nodosum, both in cases in which arthritis is present and in cases in which there is no affection of the joints. 3. That these conclusions justify the inference that erythema nodosum is frequently, if not generally, an expression of rheumatism, even when no other definitely rheumatic symptoms are present, (Dr. Stephen Mackenzie, Lancet, April 17, p. 739.)

Exophthalmic Goitre.—A paper by Dr. Wilks was read at the Ophthalmological Society, in which he stated that, of the many cases which he had seen, some had recovered, others had died, and others had been lost sight of. He had also seen slight cases, which were probably modifications of the complaint. As to the question, What were the characteristic symptoms? he considered

that there were increased frequency of the heart's action, enlarged thyroid, prominent eyeballs, a loud murmur heard in the veins with a thrill, and, in severe cases, great emaciation, with outbursts of sweating and diarrhœa. The increase in the cardiac rapidity he regarded as a primary and necessary symptom; quickened cardiac action, combined with exophthalmos and emaciation, or with enlarged thyroid and emaciation, he would regard as characteristic. The theory which attributed the symptoms to disease of the sympathetic in the neck was not good, and had not been found true in fact; though there was, probably, some disturbance of the sympathetic, giving rise to the extreme relaxation of the blood-vessels; the relaxation gave rise to murmurs which were much larger and harsher than any met with in simple anæmia; the diarrhœa and sweating might also be due to the sympathetic disturbance. Apart from the proptosis and enlarged thyroid, which could not come on suddenly, the symptoms resembled those seen in nervous women, especially at the climacteric. Violent palpitation, clammy sweat, diarrhœa, starting eyes, and choking were the symptoms produced by sudden fright. It was, therefore, reasonable to look to some relaxation of the sympathetic as a cause of the combination of symptoms seen in Graves' disease. The disease also seemed to have some relations with anæmia and chlorosis. Belladonna was the only drug in which he felt any confidence; he had observed the symptoms, even in severe progressive cases, so speedily reduced, that he could not doubt the value of the drug. After using it for some weeks, it was his custom, as the cases were tedious, to substitute iron, iodide of potassium, or digitalis, but he had observed no good effect attributable to these drugs. Dr. Wilks gave the following categorical replies to the series of questions circulated by the Society (see Lancet, March 20th). 1. He had performed one necropsy; no lesion was found in the nerves or elsewhere. 2. No cause could be assigned in any case. 3. He had seen several cases in young women where the symptoms were modified. 4. He thought the disease removable (or curable). 5. He had had cases under treatment for two or three years, with great improvement; but relapses occurred. 6. He had never seen a case recover without treatment. 7. In none of his cases had the eye become diseased or vision imperfect. 8. He had never seen a case of simple exophthalmos. 12. He had never seen Graves' disease in conjunction with others. 13. He had only seen two males affected with the disease; they were aged twenty-four and twenty-six respectively. He thought the disease was in some way associated with the reproductive organs; in women, he had seen it generally in those of middle age with families, or in young girls with anæmia and amenorrhœa. (Dr. S. Wilks, Lancet, May 15, p. 924.)

Exophthalmic Goitre.—Its Event.—The author gives the following results of 12 cases, followed to their termination:—"Seven of the twelve are dead. Two died suddenly, for which no efficient cause was found on *post-mortem* examination; one died from mitral regurgitation; one from a large axillary abscess, and probable blood-poisoning; one from gastric ulcer; one from consumption; and the friends did not know the cause of death in the seventh. The average duration of life, after the first appearance of symptoms, was $3\frac{2}{3}$ years; but this is probably only partially accurate, as the patients cannot always say when the disease began. It will thus be seen that exophthalmic goitre is by no means a harmless malady; but, of the seven who died, the death can only be attributed to Graves's disease in two—namely, those which died suddenly; for sudden death is always cardiac; and, as the patients had suffered from palpitation, it is only fair to assume that the same cause which set up the palpitation was in some way the reason of the sudden death. In the mitral regurgitant case, the mitral disease seemed more related to the antecedent rheumatic fever than the exophthalmic goitre." (Dr. Hale White, p. 132.)

Gout.—*Its Nature.*—There is a peculiar disposition of tissue-change which we may if we please denominate the gouty diathesis. Uric acid is the cause of the disease, not its consequence; but the increased formation of uric acid does not by itself constitute gout. The speciality of gout is that, as the result of a predisposition hereditary or acquired, uric acid is produced in the muscles and in the medulla of the bones. We cannot eradicate the disposition or diathesis that lies at the bottom of uric acid gout, but if we try to reduce uric acid formation in general we may do something to check its deposit in unusual parts of the body. This is the philosophical basis of the diet-treatment of gout; this is the determining force of our endeavour to regulate the quantity and quality of the food according to definite laws. Our constructive material should be hewn only out of well-chosen quarries. (Dr. J. Kent Spender, p. 151.)

Iodol as an Antiseptic.—Dr. Schmidt reports on the advantages of iodol as ascertained from the use of this antiseptic at the surgical clinics of Heidelberg. Iodol, or tetraiodopyrol, has a light-brown colour, and is almost odourless, in which respect it offers a decided advantage over iodoform. Unfortunately, it is not very soluble in water, only in a proportion of 1 to 5000. In alcohol it dissolves in three times its weight. The drug is employed in the following manner:—1. As a powder, in the same manner as iodoform. Being a finer powder, it enters and covers the part more completely than the former. It forms no scurf (in opposition with iodoform) on the wound, renders the

secretion odourless, favours the formation of healthy granulation, and has a general salutary influence on the nutrition of the affected parts. 2. As solution, in 16 parts of alcohol and 34 parts of glycerine, for the saturation of uterine or rectal tampons. It is also injected in this form into empty or scraped-out abscesses. 3. As gauze. 4. In combination with vaseline and collodium. In no instance, in spite of its extensive use, were any symptoms of intoxication observed, nor was ever any iodine after its use discoverable in the urine. It is probable that its action depends on the generation of free iodine, though we have no definite data yet regarding this point. At all events, its action is prompt and harmless, and offers no small advantage over the iodoform in the absence of any odour, though its poor solubility and its (at present) high price are equally great objections. (Dr. Georg Banno Schmidt, Edinburgh Medical Journal, June, p. 1171.)

Rheumatic Hyperpyrexia.—*Recovery with Sequelæ simulating Multiple Sclerosis.*—Dr. Foxwell publishes the details of an important case which came under treatment in the Birmingham General Hospital. A man, aged 33, was admitted on Sept. 27th, with an acute rheumatic condition which had existed for 14 days. On the following day, and after 140 grains in all of salicylate of soda had been taken, the temperature had risen to 108° in the axilla, and 111° in the rectum. The patient was at once put into a bath at 90° and kept there for an hour, when the temperature had fallen to 101-2°. On removal from the bath he was wrapped in a cold pack, and an ice-cap applied, followed by the administration of 20 grains of quinine. The temperature in 45 minutes had fallen to 98°. There was no further serious rise of temperature, and the patient recovered apparently without any recurrence of the rheumatic condition, except a rise of the temperature to 104° on Oct. 4th, and without any cardiac affection. But, on the 22nd day after the hyperpyrexial seizure, he developed well-marked symptoms undistinguishable in kind from those of ordinary multiple cerebro-spinal sclerosis, viz:—Rhythmic tremors on voluntary movement, exaggerated knee-jerks, ankle-clonus, and, later on, distinctly scanning speech. These nervous symptoms lasted for three months and then entirely disappeared, leaving the patient perfectly well, and able to follow his occupation as a saddler. Dr. Foxwell remarks: "Recovery after a rectal temperature of 111° is, as far as I can learn, of extremely rare occurrence in rheumatic fever. The noteworthy points about the pyrexia in this case are, I think: 1. Its steady rise under fairly full doses of salicylate of sodium (140 grains in fourteen hours). 2. Its apparently much more rapid rise on the administration of this drug being stopped. 3. Kairin (144 grains in forty-eight hours), given during a subsequent rise, is noted

both by Dr. Russell and myself as having had no appreciable antipyretic action. 4. Large doses of the sulphate of quinine (100 grains in thirty-six hours) acted splendidly as a stimulant, the effect of the first dose of twenty grains being especially marked, whilst none of the ill effects of cinchonism were noted. I believe it was also a very active antipyretic. 5. The employment of cold water, as instanced by the pack on Oct. 4th as well as by the bath, was by far the most potent agent in reducing the temperature. 6. Was the running up of the temperature on Oct. 4th in any way due to the brandy? Did it affect injuriously the thermic centre by dilating its arterioles? It was the first alcohol he had taken since admission. 7. The pyrexia had great persistency. The two attacks of semi-consciousness previous to admission were no doubt attended with high temperature, and it was not until after ten days of antipyretic treatment that the normal was reattained. 8. The pyrexia did not return during his stay in hospital—three months. Morning and evening temperatures were taken. If I may venture to suggest anything as to the method of employing cold water as an antipyretic, I would say its action is often not sustained for a long enough period. In the present case I was strongly advised to remove the patient from the bath twenty minutes before I did so; I believe I should have acted more wisely if I had detained him in it thirty minutes longer, raising the temperature of the water gradually to blood heat. But the nervous affections form by far the most interesting feature of the case. They were too permanent to be explained as mere functional derangements due to the action of the hyperpyrexia. They must have been the result of some organic lesion, probably an inflammation set up by the rheumatic poison. We know this can widely distribute its influence and attack various regions of the body—e.g., lungs, heart, muscles, joints, skin, &c. It seems remarkable, then, not that the nervous tissue should sometimes be affected, but that this affection should occur so rarely." (Dr. Arthur Foxwell, Lancet, May 29, p. 1012.)

Rheumatic Hyperpyrexia.—Treatment.—As a practical result of a consideration of all that I have observed of such cases, and of all that I can find written, I venture to urge that in all cases of acute rheumatism, as soon as there is any indication of nervous symptoms, and particularly in patients of a high degree of nervous susceptibility, a careful watch should be kept on the temperature, and it should be taken at frequent intervals. As soon as it shows a tendency to rise to the hyperpyrexia range, preparations should be made for the external application of cold. As I have shown, dangerous symptoms may be sudden in their onset, and drug treatment seems entirely to fail to arrest them. The question as to what point the thermometer should reach before cold is applied is an important one, and the general con-

dition of the patient will also have to be considered before coming to a decision. In his original paper Dr. Wilson Fox fixed the point at 107°, but this is obviously too high, and in a subsequent paper he fixes it at 106°. In their report the committee of the Clinical Society state that the temperature cannot safely be allowed to rise above 105°, and this also would be my recommendation, as the chances of success appear to be greater the earlier the cold bath treatment is commenced. Of all means of applying cold, the graduated bath gradually cooled from 90° to 70° is the best, but as this is not always available, the cold pack, ice-bags, or cold affusion may be tried. Frequent testing of the patient's temperature is necessary during the process, and as soon as the reduction of temperature to 100° or 99° is effected, the treatment should be suspended, the patient should be placed in warm blankets, or otherwise dangerous symptoms of collapse may supervene. (Dr. Henry Barnes, Edinburgh Med. Journal, July, p. 54.)

Rheumatism and Gout.—*Salicylate of Lithium.*—In the treatment of acute rheumatism, as also in acute gout, the salicylate of lithium is quite as effective as the salicylate of sodium. In certain cases of acute articular rheumatism treated with the sodium salt, there comes a period, after rapid and considerable improvement, when the joints still remain somewhat painful, stiff, and swollen, notwithstanding the fact that the remedy is given in doses sufficient to cause toxic phenomena. Under these circumstances the salicylate of lithium will cause the last traces of the affection to disappear promptly. It is also more effective in the treatment of progressive subacute articular rheumatism. In patients attacked with this most tenacious and troublesome form of rheumatism, Vulpian has employed, with the utmost perseverance, the most various medication, including large and repeated doses of the salicylate of sodium, without producing other than the most temporary and insignificant amelioration; and yet he has seen the salicylate of lithium bring about notable improvement in ten to fifteen days. Four grammes (about 60 grains) a day is the quantity of salicylate of lithium usually required. The effects of the remedy begin to be manifest in a half to one hour, and consist in headache—which, however, disappears within a few hours—and vertigo and dulness of hearing, which are more persistent. In some subjects it also causes colic and diarrhœa. The curative effect of salicylate of lithium is due in large part to the salicylic acid; for, if the other salts of lithium are substituted for it, the same results are not obtained. Some portion of the beneficial effect is, however, due to the lithium, for the salicylate of lithium is more effective than the salicylate of sodium. The rheumatismal manifestations which resist the action of six and seven grammes (ʒ iss-ʒ ij) of salicylate

of sodium yield to four grammes (about ℥ j) of salicylate of lithium. To these observations of Prof. Vulpian, the writer will add that he has found the salicylate of lithium very effective in myalgia or muscular rheumatism, given in the quantity mentioned above—fifteen grains four times a day. (Dr. Bartholow, International Journal, April, p. 586.)

Rheumatism and Gout.—Salicylic Acid.—Certain conditions must be observed to ensure success in the administration of the remedy. They are as follow:—1. The true salicylic acid obtained from the vegetable kingdom must alone be employed. If you have to give large doses, avoid giving the artificial product obtained from carbolic acid, however much it may have been dialysed and purified. An impure acid will very quickly produce symptoms closely resembling delirium tremens. 2. Give the acid without any alkali or base. A very good form is to mix 100 grains with 15 grains of acacia powder and a little mucilage. Allow the mass to stand and harden, and then divide into thirty pills. 3. Place the patient fully under the influence of the drug—that is, let him have sufficient to produce cerebral disturbance—*i.e.* buzzing in the ears or headache, or slight deafness; with the development of these symptoms the temperature and the pain in the joints will begin to decline. To an adult I generally administer three doses of 20 grains (six pills) at intervals of an hour, and if the head remains unaffected, a fourth dose at the end of another hour; and then repeat the 20 grains every four hours until the physiological effect of the remedy shows itself. In the majority of cases from 80 to 100 grains are enough. In severe cases 140 to 150 grains may be required. Afterwards about 80 grains a day are sufficient, and as the temperature declines smaller quantities will develop their physiological effects, 60 or even 50 grains being then sufficient to produce cerebral disturbance. It would appear that as long as the rheumatic poison is circulating in the system, the physiological effect—that is, the effect that it produces in the healthy organism—does not show itself; acting as an antidote, the greater the amount of poison the larger must be the dose of the remedy; but as soon as the formation of the *materies morbi* is stopped, then the excess of the remedy acts as it would in the healthy organism and its peculiar physiological effects are developed. It is a very striking illustration of the difference between the therapeutic effect of a remedy and its physiological action. 4. Give the patient from 40 to 80 grains daily for ten days after all pain and pyrexia have passed away. 5. Let the patient's diet consist entirely of milk and farinaceous food for at least a week after the evening temperature has been normal. On the other hand, if the patient has meat and soup, you may look forward with fair probability to a relapse. 6. Take care to maintain a daily

and complete action of the bowels. Calomel is the best purgative, from 2 to 5 grains at night, followed in the morning, if necessary, with a saline draught. This is the most important adjuvant to the action of salicylic acid, and I will presently explain to you why this is the case. 7. Let the patient be enveloped in a light blanket, and with no more bedclothes than are sufficient to keep him from feeling cold. The object of the treatment now is to cool the patient—not, as in former times, to sweat the poison out of him; and the cooler he is kept the sooner will the temperature be lowered. In fever increased heat increases the metabolism just as in a cold-blooded animal. (Dr. P. W. Latham, p. 152.)

Rotheln.—*A point in Diagnosis.*—The extreme infectiousness, notwithstanding the comparative harmlessness, of German measles makes it very desirable to find early indications of its presence. I have been struck lately in two or three cases with the fact that the earliest symptom to excite the notice of the patient has been a swollen gland in the neck at the back of the sterno-mastoid muscle. One young lady lately consulted me about such a gland of a considerable size, and without any obvious explanation in its neighbourhood. Four days later the rash of Rotheln appeared and explained the mystery, and the single gland had become the usual chain on both sides of the neck. When the disease is prevalent, or already exists in a family, and a swollen cervical gland in a young person appears without obvious reason, it may be suspected that the disease is already in the system. The occurrence of cervical glandular enlargements is of course one of the commonest and most interesting notes of this least pyrexial of the eruptive diseases, and the early appearance of the symptom coincidently with the rash, or even a day before, as Dr. Goodheart describes in one case, is also known. But its appearance four or five days before the eruption seems worth noting for diagnostic purposes. (Dr. J. Gray Glover, Lancet, April 24, p. 785).

Scarlatinal Synovitis.—Dr. Ashby classifies the joint affections associated with scarlet fever under four heads:—1. Synovitis; 2. Acute or chronic pyæmia; 3. Acute or subacute rheumatism; 4. Scrofulous disease. That synovitis differs essentially from rheumatism, may be seen by a consideration of the following points:—(1) Synovitis is more common in some epidemics than in others, and occurs more especially in those cases where the febrile stage is prolonged on account of the severity of the throat affection. (2) The joint-lesions nearly always supervene at a definite stage of the attack, namely, at the end of the first week; a fewer number of joints are affected than in acute rheumatism; the attacks are more fugitive, and rarely recur.

(3) Pericarditis and pleurisy are not common, and endocarditis is very rare. It must appear tolerably certain that, if these attacks were really rheumatic, the scarlatinal poison bringing into activity the latent rheumatism, the frequency of the attacks would not vary with the epidemic, or supervene so constantly at one period, or above all, would so rarely give rise to peri-endocarditis, as it is well known that an attack of acute or subacute rheumatism during childhood only exceptionally spares the heart. (Dr. Henry Ashby, p. 146).

Scrofulous Neck.—*Operative Treatment.*—So manifold are the aspects of the scrofulous neck, and so varied the circumstances that mould its clinical being, that the conditions under which certain operations are advisable can only be considered in bare outline. Excision with the knife, so far at least as the neck is concerned, can be but rarely practised. It is adapted for cases where a solitary gland or a small well-limited cluster of glands persists obstinately after other manifestations of scrofula have disappeared. Such glands should be movable, free from adhesions of peri-adenitis, and emphatically chronic. Operations upon larger gland clusters, even when the individual tumours appear quite free, are often exceedingly dangerous. The glands are found on exposure to be less movable than they appeared, to extend deeply, and put in danger the great vessels and nerves or the dome of the pleura if obstinately pursued with the knife. Extensive operations of this kind appear to me to be rarely justifiable. Cautery puncture is admirably adapted for large perfectly indolent gland tumours that are near the skin, are fixed, and are too large for scraping, and unsuited for excision. A slender cautery point is introduced into the gland and then thrust in many directions through its substance. The ill-conditioned mass inflames, its parts break down, and the cautery aperture affords a free exit for the débris that results. In many instances this measure has been most successful, and the resulting scar slight and without the conspicuous characters of the common strumous cicatrix. Scraping away the gland mass with a Volkmann's spoon is a measure that has been very extensively employed, and is applicable to a large series of cases. It is best adapted to cases where sinuses exist, or where the gland is fixed and either breaking down or else quite disorganised. The gland so treated should not be of great size. In many instances the instrument does little more than remove the products of disintegration; in other cases the diseased but still living gland tissue is broken down and removed, and the surgeon effects in a few minutes what nature would accomplish only in weeks or months by means of the suppurative process. When no sinus exists an opening should be made into the gland with the cautery. This measure is not without risk, and it cannot deal with the gland

capsule that remains behind, but in spite of theoretical objections it must be owned that the procedure answers well in practice. It is obviously not applicable to an extensive series of glandular swellings. (Mr. F. Treves, June 5, p. 1061.)

Scrofulous Neck.—Local Applications.—I take it that the day of local applications is over. It is no longer a routine measure to paint iodine over the skin of the neck in all cases of cervical gland enlargement. Such painting appears to be of most use in certain chronic cases where the glands—few in number—have become quite inert, listless, and free from all tenderness. In a large number of instances it does harm, probably by adding to the disturbance already existing in the periphery. Suppuration in glands has, I think, been often determined by iodine paint used by lavish hands. In some slowly progressing cases, where the glands are not tender and there is no distinct evidence that suppuration exists, a steady rubbing of the part with the ointment of the iodide of lead appears often to effect considerable improvement. Poultices of seaweed and compresses of salt water do little more than divert the patient and increase his risks of catarrh. In early cases, where the trouble is active and progressing, the use of the cervical splint alone is the most effective of local measures. With its application the parts are placed at rest, the glands cease to be painful, and very commonly cease to increase. The same may be said with reference to chronic enlargements that have become once again the seat of active change. (Mr. Fredk. Treves, Ibid. See also p. 317 of this volume.)

Scrofulous Glands.—Excision.—When the tubercular process has been allowed to run its course for a long time, and adhesions have formed, the real difficulty is experienced, and often a tedious dissection is required before the diseased glands can be removed. And here let me say that this difficulty is often of our own making. We meet a case in which two or three glands in the neck are swollen and hard. A careful inqury into the history of the case will satisfy us that the glands are scrofulous. But instead of dealing with them at once, we allow the disease to spread, more glands to become infected, and adhesions to form, whilst we wait. Wait for what? To try the effects of this or that external application, painting with iodine, or a host of other remedies, which experience should have taught us in that stage are no remedies at all. Sometimes the delay is due to our unwillingness to make a cut which may leave a scar, and then nature takes the matter in hand, the gland softens, an abscess forms, and the end of it is that a far worse scar is left than would have resulted from timely intervention. Besides, all this time other glands are preparing to go through the same process. Such things ought not to be. What I maintain is, that the

earlier we attack these glands the less we shall have to do, and the smaller and more insignificant the scar will be; and, what is more important still, the focus of the disease may be got rid of through quite a small opening. Often, however, we have at least this satisfaction, that we cannot blame ourselves if the disease has become extensive. It may be so when first we see the patient, but even in the most extensive cases of scrofulous glands we may hope for a cure by surgical art. (Dr. Kendal Franks, p. 319.)

Secondary Parotitis.—Parotitis, not due to mumps, may be due to local injury, or may occur during one of the acute fevers, usually typhus. It also occurs in pyæmia; and of this true pyæmic parotitis I have collected many cases. But the following cases make up a fourth group; a few of them, but only a few, are cases of pyæmia. In all, the primary lesion was in the abdomen or pelvis. In nearly all, the parotitis was the only secondary lesion. Most of the patients recovered; and in many cases the absence of all signs of pyæmia or septicæmia was especially noted. It is probable therefore: 1. That the parotid is related to the peritoneum. 2. That it is also related to the generative organs. 3. That an abdominal or pelvic lesion may be followed by parotitis without pyæmia; and 4, that such a parotitis, if it occurs late, in a patient not exhausted by the primary trouble, and with healthy kidneys, is usually followed by recovery. This relation of the parotid to the abdomen and pelvis was called by old writers a "sympathy." It is probably very complex; it may include the minute structure and chemical and vital changes of the parts concerned; their vascular, lymphatic, and nervous connections; their liability to diseases; their inherited and embryonic tendencies. But even if all the cases I have given were cases of pyæmia, which they are not, we should still have to ask why pyæmia starting in the genito-urinary system is more often the cause of parotitis than pyæmia starting in the limbs. This question has made me examine the relation, in pyæmia, between the site of the primary lesion and the distribution of the secondary abscesses. I hope soon to publish some statistics on this point; certainly the distribution is not a matter of chance. Thus disease seems to be able to demonstrate relations between organs which in health appear independent.

[The series of 60 cases referred to is made up largely of examples of parotitis following disease or disturbance of the urino-genitary and other pelvic organs (the case of President Garfield is also included). Ten cases were observed in persons in whom ovariotomy, or some operation upon the ovary, had been recently performed. One female suffered from parotitis during six successive pregnancies. 23 cases terminated in death.] (Mr. Stephen Paget, Lancet, April 17, p. 735).

THYROID CYSTS.—*Treatment.*—The general principle of the treatment of these cases should be to make an opening into the cyst and drain it, and as for the possibly serious hemorrhage that may arise in doing this it must be arrested by pressure, by clamping and ligaturing the vessels, by the use of the actual cautery, or by perchloride of iron, according to the circumstances of the particular case. (Mr. Walter Edmunds, St. Thomas's Hospital Reports, vol. xiv., p. 209.)

AFFECTIONS OF THE NERVOUS SYSTEM.

ALCOHOLIC PARALYSIS.—After some preliminary observations on the history of alcoholic paralysis, Dr. Dreschfeld proceeds to review the clinical course and the pathology of the affection in the light of his more recent experience. He divides it, according to the more prominent symptoms, into two clinical groups, "alcoholic ataxia" and "alcoholic paralysis," and illustrates each group by a series of cases. Certain symptoms, such as the lancinating pains, the cutaneous anæsthesia and anomalies of sensation, the muscular hyperæsthesia, and the absence of tendon-reflexes, appear to be common to both varieties; but the characteristic difference between them is that ataxia, parallel with that of tabes, replaces in the former the paralysis and atrophy of muscle found in the latter. Of the ataxic group, three cases are quoted at length. Of these, one died in hospital from another cause, and gave an opportunity of once more verifying the fact that the disease is essentially a peripheral neuritis, the cord being described as perfectly normal. A fourth case is related as showing the combination of ataxia with actual paralysis. In this last case, the author calls particular attention to the remarkable mental change often to be noticed in this disease—the presence, namely, of coherent delusions of a peculiar type. The patient will circumstantially describe imaginary conversations he has carried on, or imaginary actions he has performed, ignoring their obvious impossibility in the condition of body to which he is reduced. This phenomenon seems to be of frequent occurrence in alcoholic paralysis, and indeed to be almost peculiar to chronic alcoholism. A set of four cases is given to show the symptoms and course of the now well-known typical form characterised by atrophic muscular paralysis. Three of these four showed the peculiar psychical derangement just described. The author suggests that the two varieties really differ only in rapidity of onset, pseudo ataxic symptoms being first developed in those cases where the disease advances slowly to the stage of paralysis and atrophy of muscle. Since, however, the paralytics usually come first under observation when they are unable to stand or walk, it is, he remarks, not easy to determine the existence or not of a preliminary ataxic stage.

(Dr. Niven's abstract of Dr. Dreschfeld's article in *Brain*, Medical Chronicle, April, p. 46.)

Chloral Hydrate in Certain Mental States.—As to chloral itself I find it hard to be just, for I see so many disastrous results from its abuse that I fear I consider more harm than good has followed its introduction. It is the first thing now taken by the man of intellect who is over-working; it is eagerly sought by the nervous fashionable lady; it is a temporary prop to the drunken, and to the doctor in many cases it is a means of keeping a troublesome patient quiet. My chief objections to it are that it soon establishes a habit, and that it almost always disturbs digestion. In my experience patients are constantly admitted to Bethlem who at once say, "Doctor, I must have my night draught." I withhold it, and after two or perhaps three terrible days of suffering sleep comes, and with it the delusions which have been almost embalmed by the chloral slowly disappear. I have seen delusions of months thus vanish in a week. Though there is danger with chloral, there is aid too to be got from it, and though I do not trust it so fully as some, yet I do believe that in cases of acute delirious mania chloral, if given with abundance of food and stimulants, will save many from death. In certain cases, too, of great excitement coming on periodically and with some warnings, chloral given at the time of the threatening in doses of from 30 to 40 grains may cause sleep, from which the patient awakes refreshed and free from mania. In some cases of epileptic furor, this drug too is of great service, and I have given it per rectum during the fit in cases in which the fury has always occurred after the cessation of the fit, or on awakening from the post-epileptic coma. Chloral alone in melancholia with sleeplessness is rarely of more than temporary service. It may tide over periods of excitement when some bodily complication is also threatening. It may be given per rectum or by mouth, but it is not well to try to put it in the food as it will be certainly detected, and give rise to suspicion in the insane patient. (Dr. G. H. Savage, Practitioner, Sept. p. 184.)

Chorea.—*Paralysis in.*—It is probable that the affected muscles in chorea are always deficient in force, but loss of power amounting even to marked paralysis may exist out of proportion to the intensity of the muscular spasm. Indeed, paralysis may be the predominant symptom preceding the choreic movements, and persisting long after their disappearance. (Dr. W. B. Hadden, St. Thomas's Hospital Reports, vol. xiv, p. 135.)

Chorea.—Anæsthesia in.—Anæsthesia is not very uncommon in chorea, but its presence, as in hysteria, is often overlooked not only by the physician but even by the patient. I am inclined to think that there is no rule as regards the distribution of the

anæsthesia. Nevertheless, in the majority of cases which I have seen, the anæsthesia when unilateral has been limited to the side chiefly affected by the movements, or, when bilateral, has been more marked on that side. (Dr. Hadden, Ibid, p. 139.)

Cocaine in Tooth Extraction.—At a recent meeting of the First Russian Society of Dentists, Mrs. Elena F. Vongl-Sviderskaia, a dentist of St. Petersburg, made a communication on twenty-five cases of tooth-extraction, in which, to relieve the pain of the operation, she had employed injections of a 20 to 30 per cent. solution of cucaine. About a half of a syringeful (containing four-and-a-half grains of the alkaloid, when a 30 per cent. solution was used) was slowly injected into three points: into the process of the gum between the teeth, then under the gum on the buccal side of the tooth, and, lastly, at a corresponding spot over the lingual side. After waiting for five or seven minutes, she proceeded with the extraction. In all of the cases, either great relief or complete absence of pain was obtained. As to accessory unpleasant symptoms from the use of such a large dose of cucaine, she noted only mental depression with drowsiness in one case, and intense oppression in the chest, dilatation of the pupils, accleration of the pulse and breathing, and mental excitement in two others. The remaining twenty-two patients presented no toxic symptoms whatever. (Med. Record, July, p. 304.)

Diabetic Coma.—*Etiology.*—1. Diabetic coma affects chiefly the younger persons. According to Pavy, who based his statistics on nearly 4,000 cases, 55.65 per cent. of the cases of diabetes occurred between the ages of 40 and 60; whilst, from an analysis of eighty cases of diabetic coma, I find that 70 per cent. occurred between the ages of 20 and 40, and only 24 per cent. between 40 and 60. It may occur, also, in very young persons and even in children under the age of 5. 2. It may come very early in the course of diabetes; in a case communicated to me by Prof. Charcot, the urine was examined two months before diabetic coma appeared, and found free from sugar; and in some of the cases which proved most rapidly fatal, the patient showed no subjective symptoms of diabetes previously to the attack of coma. In the younger persons, diabetic coma mostly appears from six to twelve months after the first symptoms of diabetes; in the older persons, coma is noticed at a later period. From these facts, we may conclude that coma occurs almost exclusively in the severer forms of diabetes. 3. As regards hereditary disposition, I have noticed some interesting facts. Quincke records a fatal case of diabetic coma in a girl, aged 16, whose brother, aged 19, and uncle, aged 29, had also died in a similar way. Frerichs observed diabetic coma in a girl, aged 12; her brother, aged 15, who also suffered from diabetes, was much affected by the death of his

sister, and died from diabetic coma two days after her. In another case given by Frerichs, two sisters, one aged 18, the other 21, died from coma; the first symptoms in the elder sister appearing as she stood at the bed of her dying sister. Prof. Charcot kindly communicated to me a case of death from diabetic coma in a gentleman, aged 42, whose sister died also from diabetic coma, at the age of 50, and whose father had also died from diabetes; whilst one uncle, who had phthisis, from which he recovered, died suddenly. In a case of rapidly fatal diabetic coma, which I saw with Mr. Bradley, a younger brother, who was known to have had diabetes, had died under similar circumstances. I give these facts without any comments; they seem, however, to show as if a predisposition was inherited. (Dr. Dreschfeld's Bradshaw Lectures, Brit. Med. Jour., Aug. 21, p. 330).

Diabetic Coma.—Exciting Causes.—As regards the exciting causes, several have been well established; of these, the principal are: 1. Excessive physical exercise. This seems to be the exciting cause in about 50 per cent. of the cases. 2. Mental shock. This contributes 10 per cent. 3. The sudden change of diet from a mixed to an exclusively nitrogenous diet. This I have noticed in one of my earlier cases, when a rigid diet was instituted in a patient that had not been treated at all before, and where, on the second day of treatment, fatal coma set in. I know of several others; and Ebstein, Joenecke, and Von Mering relate fatal cases from exclusive meat diet. An exclusively nitrogenous diet is often, but not always, well borne, and borne with good effects, as was established by Cantani; but the change from the mixed to the nitrogenous diet should be gradual, and never abrupt. 4. Surgical operations in diabetic patients are occasionally followed by coma. It would seem as if the causal agent here was the nervous shock; it would be interesting, however, to see how far the administration of the anæsthetic is to be blamed. Thus, in about thirty operations for cataract in diabetic patients, where no anæsthetic was given, Dr. Glascott informs me he has never met with diabetic coma following the operation. 5. Lastly, intercurrent febrile affections, as croupous pneumonia and catarrhal pneumonia, an acute gastric catarrh, or a pharyngeal abscess occurring in diabetic patients, may soon be followed by the symptoms of coma. (Ibid, p. 360.)

Diabetic Coma.—Treatment.—However much physicians may differ as to the pathology of diabetic coma, I think it is admitted generally that the appearance of the acetone breath and the presence of perchloride of iron reaction always indicate that we have a severe case of diabetes to deal with, and that in these cases a slight cause may bring on a fatal coma. Such patients should be forbidden active exercise; they should avoid mental

worry and excitement. As obstinate constipation has occasionally been assigned as an exciting cause, the condition of the bowels should be attended to, but only gentle laxatives be given. If the symptoms come on soon after a course of an exclusive nitrogenous diet, a mixed diet should be at once recommended. We may in this way succeed in averting the symptoms of coma, for when once these are present, our therapeutics are powerless. Intravenous injection of phosphate of soda and chloride of sodium, recommended by Fagge, only delayed the fatal event for a few hours; not more success was obtained by transfusion. Stadelmann believing, as we saw, that the symptoms of diabetic coma depended on the presence of increased acid in the blood, gave in one case large doses of bicarbonate of soda; there was some slight temporary improvement, but the fatal result followed a few hours later. The different antiseptics have been tried, but with no better result; in fact, several cases of diabetes died from coma during a course of treatment with carbolic acid. The inhalation of oxygen, and the administration of stimulants, such as ether and camphor, gave no better result; the latter are, however, indicated in diabetic collapse. Very gloomy indeed is thus the progress of diabetic coma, and only too true the saying of Prout, who compares a person with diabetes to one who is walking on the brink of a precipice. (Ibid, p. 363.)

Epilepsy.—*General Principles of Treatment.*—Diet, exercise, and proper hygienic treatment, including baths, rank above all other single therapeutic measures. If I had to choose between them and bromides even, I would select the former. On the whole, I fear that the reign of bromides has made the condition of epileptics more miserable than it was before, and has done our patients an actual harm. At the best, not more than five or ten percent. of epileptics can be cured, while the majority are reduced by bromides to a state of physical enfeeblement and distressing mental hebetude. Besides, physicians now fly to the bromides, and, trusting to them, neglect the searching inquiry into the exciting cause, or the careful direction of the patient's habits, which are so essential. All medical experience unites in ascribing benefit to judicious regulation of diet and exercise. The only difference of late years is that we do not now believe epileptics should be starved. Epileptics should live on a plain, easily digestible diet, containing a preponderance of fat. A special meat diet, or milk diet, or farinaceous diet, is not injurious nor curative. It all depends upon the patient. A meat diet may be best if the patient is lithæmic or has a fermentative dyspepsia. A milk diet is especially useful for children and erythritic women. The meals should be small, and, in cases of voracious appetite, four, five, or six light meals a day should be given. No heavy meal should be taken within four hours of sleeping. Indeed, no

heavy meals should ever be taken by epileptics. Special diets have often to be rigidly laid down simply as a matter of discipline, since patients will not follow any general directions. I believe that the urine and digestive functions should be carefully studied, and that thus we shall find indications for selecting the right kind of food. (Dr. C. L. Dana, p. 176; and New York Medical Journal, April 24, p. 453.)

Facial Spasm—*Nerve Stretching for.*—In the Lancet, August 27, 1881, I published particulars of a case of stretching of the facial nerve for clonic spasm ("convulsive tic") of the muscles of one side of the face of two years' duration, occurring in a woman aged fifty-nine, who had previously been under the care of Dr. Ross. The operation, which was performed in March, 1881, was followed by complete paralysis of all the muscles supplied by the facial nerve on the corresponding side. About five weeks subsequently, the affected muscles gradually began to regain their power, and at the end of five months the paralysis had entirely disappeared. As no return of the spasm has taken place, and a period of five years has now elapsed since the operation, the cure may be regarded as complete and permanent, and on this account the case may, perhaps, be thought worthy of further record. In a recent article by Prof. Zesas, particulars are given of the results of nineteen cases of this operation collected from different sources. In only two other instances—viz., in one case operated upon by Zesas himself, and in another by Navratil—in addition to the one above referred to, has the cure been permanent. In four cases there was considerable improvement, while in ten the operation failed to give more than a temporary relief; in the remaining two cases the result was doubtful, as their subsequent history was not followed out. Inasmuch, however, as benefit has resulted in seven out of seventeen cases, Zesas is of opinion that the operation should still be performed whenever the spasm is not due to intra-cranial lesions. (Mr. F. A. Southam, Lancet, April 10, p. 685.)

Hernia Cerebri.—*Treatment by Silver Plate.*—At the Clinical Society on March 12th, Dr. Maclaren read an account of a case of Hernia Cerebri successfully treated by closing the Opening in the Skull with a Silver Plate. A man, aged 26, was admitted to the Cumberland Infirmary on March 25th, 1885, with a compound fracture of the skull inflicted three days before. For six days after his admission his condition grew progressively worse. He became deeply comatose, passed motions involuntarily, and had frequent convulsive attacks. The scalp wound was then enlarged, and all fragments of bone removed; they were ten in number, and some deep in the brain substance. The aperture left in the skull was three inches long, and varied in

breadth from one inch above to half an inch below; it was three-quarters of an inch in front of, and parallel to, the left temporal ridge, and its lower end was at the supra-orbital ridge. Some brain which had protruded was removed and some diffluent brain gently syringed away. While being put under chloroform it was noticed that the right side was paralysed. An unsuccessful attempt was made to make the wound aseptic. From this time his condition improved; he gradually became less comatose, convulsions ceased, and in about a fortnight he understood what was said to him, though he did not speak. By this time hernia cerebri had again occurred, and Dr. Maclaren removed it on April 14th, placing a silver plate (a rolled out florin) inside the skull, so as to block the opening. On May 3rd the hernia cerebri again existed, owing to the plate slipping to one side within the skull. The protrusion was cut off, and this time the plate so secured with wire that it could not be thrust to one side. The scalp was liberated by two incisions parallel to the wound and sutured over the plate. The plate was left in for two months, no protrusion occurring, when it was removed, and the wound soon healed. He was discharged from the hospital on Sept. 5th, when there was slight dragging of the right leg, absolute paralysis of the right arm, and slight want of expression on the right side of the face. He was sometimes at a loss for a word, and much given to repeat the same expressions. During the latter part of his stay in the hospital he had two fits, and he has had several since, mostly at night, and always with an aura. The paper pointed out the very small amount of local irritation caused by the plate, which did not exercise any pressure on the brain, but merely replaced the normal covering. The result was a substantial reason for trying it again in a similar condition. (Dr. Maclaren, Lancet, March 20, p. 543.)

Hysterical Vomiting.—*How to Treat it.*—Of hysterical vomiting I have seen several cases, and have not found much difficulty in dealing with them; but a particular course must be followed, which presents no difficulties in hospital practice, in which only have I met with these cases. In private practice it might be less easy to pursue. These cases begin with occasional vomiting two or three times a day only, or even less. As soon as you know what it is (which at first you may not) treat it with indifference. It soon becomes more frequent. In a few days the nurse will tell you that everything taken is immediately rejected. You order a teaspoonful of water to be given at intervals and nothing else, saying that you are quite sure that will stay down. You will hear the next day that even that is immediately thrown up. Then you have got her. Place her flat on her back with the head well thrown back on the pillow, the neck and upper part of the chest being fully exposed. Let her swallow

a teaspoonful of water, and keep your eyes steadily fixed on the throat; in a short time you will see a slight movement in the muscles of the throat. Say at once, "Don't do that again; anyone can make himself sick in that way." The attempt may be repeated, and must instantly be checked. You watch her for a quarter of an hour, and then point out to her that she is wrong in supposing that nothing can be retained. You will not be bothered by any recurrence of this symptom. (Dr. Wade, p. 173.)

NERVOUS SEQUELÆ OF SMALL-POX, ESPECIALLY AS AFFECTING SPEECH.—At the Clinical Society on March 12th, Drs. Whipham and A. T. Myers read a paper on some Chronic Nervous Sequelæ of Small-pox, especially as affecting the speech, and narrated the particulars of two cases. They had been unable to find any reference among English writers, although doubtless such cases occasionally occur in this country, seeing that several instances are on record in Germany and in France. The patients were married women, aged 45 and 42 respectively: one had small-pox in 1879, and the other in 1881, and both recovered incompletely with some paralytic and ataxic symptoms, the chief peculiarity being an affection of the speech, in which the syllables were scanned or "squeezed out." In the first case the patient had enjoyed excellent health until she fell sick of small-pox, three weeks after confinement. The disease was of the confluent variety. She was delirious for twelve days, and on recovering her senses it was found that she was unable to make herself understood for the next few days. There was much muscular weakness in her hands and legs. Her temper became very irritable. Her tongue was protruded to the right at first, with the tip pointing downwards, and as protrusion was completed, it gradually assumed the normal position, and this symptom lasted for three years. The right azygos uvulæ acted more powerfully than the left. Her power of writing left her in the earlier stages of the disease, but was subsequently recovered to a great extent; she could not button her clothes, and if she held a cup in her hand she was liable to drop it; the left hand was more affected; the grasp of both was feeble. Sensation was perfect, and her intelligence when under observation at St. George's Hospital was remarkably acute. The legs were affected at first, and her gait was extremely awkward and unsteady. With the exception of the affection of the speech, she recovered from all these symptoms. She first came under observation in Jan. 1880, and on Nov. 15th, 1885, the peculiarities of speech remained—viz., her inabilitiy to pronounce correctly such words as "Clara," which became "Nai-dee"; "Richard," which was pronounced "Nit-erd"; each syllable was forcibly jerked or "squeezed" out. When she attempted conversation it was almost impossible to understand her. The second case was that of a woman aged

forty-two, who had enjoyed good health until July, 1881, when she caught small-pox. The disease was modified by vaccination, but for the first few days she was in a state bordering on mania, and unable to articulate. She bit and tore the bedclothes with her teeth, and grasped objects firmly with her hands, although she had nearly lost the power of moving her upper and lower extremities. Stools were passed voluntarily. Her pupils were unequal. In this state she remained for a week. She then partially recovered her senses and her power of articulation. Her speech very closely resembled that of the former case, being slow, nasal, and monotonous; each syllable was jerked out in a semi-explosive fashion, but she did not, as in the former case, experience difficulty with special letters or words. She was liable to outbreaks of temper, and her gait showed some incoördination, though they were no symptoms of locomotor ataxy or disseminated sclerosis; the deep reflexes in the legs and arms were slightly in excess. She could not perform the movement of the shake on the piano, nor could she plait her hair; she could not nurse a child lest she should drop it. During the four years she was under observation she regained control over her limbs, and her speech at the last examination (Nov. 15th, 1885) showed slight improvement. Inquiry at some of the chief small-pox hospitals did not furnish any similar instances, except at Deptford, where Mr. Struthers had met with two cases in which speech became unintelligible, one of which recovered in three weeks and the other died. It was remarked by the authors of this paper that the clinical picture in these was not that of disseminated sclerosis. There was sudden onset, but no increase of tremor on motion, and no nystagmus, and the "squeezing out" of the syllables was different from the ordinary form of speech in disseminated sclerosis, and what was more important, the prognosis was better. It was suggested in explanation of the symptoms in these cases that minute scattered hemorrhages, chiefly cerebral, had occurred, and that such lesions might be more common in small-pox than in other fevers. This hypothesis appeared probable from the fact that out of eight closely analogous cases tabulated by the authors, this peculiar scanned speech had been a sequela in six cases in which the patients had suffered from small-pox. Since this communication was sent into the Society, Prof. Jaccoud's clinical lectures have been published, in which he gives two similar cases from his own practice, one after pneumonia, the other after small-pox. (Drs. Whipham and A. T. Myers, Lancet, March 20, p. 544.)

Night Palsy.—I have been led to consider this affection a functional derangement of the nerves, occurring for the most part in women at or about the climacteric period, and in my experience appearing to be more likely to occur in women of a hysterical

temperament. I believe that the period of the menopause has a decided determining influence on the occurrence of these seizures. As Dr. Saundby says, "we are all familiar with the various forms which neurasthenia takes in climacteric women," and I believe that this "special form of numbness of the extremities" is one of them. At or about the time of the cessation of the menstrual function women's nervous systems undergo a profound change. Often at this time nutritive changes are also apparent. A thin woman becomes corpulent; those with any tendency to the growth of hair on unusual parts again develop it, although the growth may have ceased or almost disappeared during the child-bearing period; the tendency to the return of hysterical symptoms is also most common. All the patients I have seen who have suffered from this affection have been women, and in this I agree with most other observers. (Dr. Steavenson, p. 178.)

Nodding Spasm.—At the Harveian Society on April 15th, Dr. Mackenzie exhibited two infants, aged respectively nine and fifteen months, each presenting a series of more or less Rhythmical Movements of the Head, partly consisting of a nodding of the head forward and partly of a rotatory movement, the latter being more marked in one case than in the other. In each there was nystagmus, which, in one case, was almost entirely confined to one eye. The nystagmus was increased, or evoked if absent, by restraining the movements of the head. The nodding movements ceased during sleep. There were no ophthalmoscopic changes. In neither case was there decided evidence of rickets. In both the nodding spasm came on without apparent cause. He pointed out that they were examples of a rare form of spasm which had been well described by Henoch. It occurred especially during the dentitional period, and usually terminated spontaneously, often after the eruption of a tooth. Henoch drew attention to the association of movements of the eyes with those of the head as indicating the close anatomical relation of the roots of origin of the spinal accessory and upper spinal nerves, which supply the throat and neck muscles, with those of the oculo motor communis, supplying the muscles of the globe. (Dr. Stephen Mackenzie, Lancet, May 1, p. 833.)

Peripheral Neuritis in Tuberculosis.—That many neuro-muscular affections of obscure origin, but hitherto suspected without proof to be due to central lesions, are unquestionably dependent upon affections of the nerve-trunks themselves, has now been well established by the accumulated facts concerning peripheral and multiple neuritis. The same lines of inquiry are leading to the overthrow of many a case attributed to "functional" derangement. This has never been better illustrated than in a paper by Drs. Pitres and Vallard, to be found in the current

number of the *Revue de Médecine*. The conclusions at which MM. Pitres and Vallard arrive are stated as follows: 1. In the course of tuberculosis, as in that of other infective diseases, it is not rare for the peripheral nerves to become the seat of parenchymatous changes, having the characters of so-called degenerative neuritis. 2. These forms of neuritis are local, and do not depend upon pre-existing lesion of the brain or cord. They are to be met with in subjects whose nerve centres (brain, cord, meninges) and spinal nerve roots are perfectly intact. 3. They may attack indifferently the sensory, motor, or mixed nerves; and may similarly involve the cranial nerves (optic, oculo-motor), the pneumogastric, the phrenic, &c. 4. Their very complex and variable symptomatology is as yet but incompletely known. It is, however, possible to divide them into three groups. The first comprises cases where the neuritis discovered post mortem has been unsuspected during life owing to the serious symptoms due to the development of the tuberculosis (latent neuritis). The second comprises cases in which localised or diffuse muscular atrophy constitutes the predominant symptom (amyotrophic neuritis). The third includes cases in which sensory disorders are produced, as hyperæsthesia, anæsthesia, neuralgia, &c. (painful or anæsthetic neuritis). 5. The frequency of peripheral neuritis in the tuberculous, the variability of its distribution, and consequently of its symptomatology, explain the occurrence and clinical polymorphism of the nervous derangements which arise in the course of tuberculosis. (MM. Pitres and Vallard, Lancet, April 3, p. 654.)

Sciatica.—*Puncture of the Nerve Sheath in.*—Some years ago I was asked by a medical man in Calcutta to see a case of aggravated sciatica of long standing in a man of middle age. The pain was very severe, continuous, and liable to increase of a paroxysmal character. The posterior muscles of the thigh were somewhat atrophied; the patient himself was wasted and worn by continued suffering and deprivation of rest and sleep. There was no history of syphilis, gout, rheumatism, or other specific cause. A malarial origin of course was possible, but as far as I can remember there was no satisfactory explanation of the origin of the disease. All the usual methods of treatment had been resorted to, but without relief. On examining the limb carefully, I detected with some feeling of fluctuation a fulness and tenderness in the course of the sciatic nerve near its origin in the upper part of the limb; I thereon introduced a long narrow knife into the swelling until it entered the sheath of the sciatic nerve; this gave exit to a certain quantity—a couple of drachms or so—of clear serous fluid, which was followed by immediate relief of suffering, and rapidly resulted in complete recovery. I have seen other cases, none so well marked as this one, however, and

with much less effusion of fluid, where incision, or rather I should say puncture, has given relief; but I am not aware if others have had similar experience, and would call attention to it as of practical interest. (Sir Joseph Fayrer, Practitioner, April, p. 266.)

Sciatica.—Treatment by Galvanism.—After brief notes of the cases, Dr. Steavenson says, "The sixty cases have been more or less under my care. Thirty-seven have been cured; one had a return of sciatica and was cured a second time; eleven improved only; two did not improve; concerning nine, I am uncertain as to the result; and two are still attending the hospital. Of those that recovered, three cases were cured with 1 application, two required 2 applications only, seven cases were galvanised 4 times each, two were galvanised 5 times, one case required 6 times, four cases 7 times, five cases 8 times, one case 9 times, four cases 10 times, two cases 11 times, one case 12 times, one case 14 times, and three patients came 15 times before they were satisfied that they were cured; one patient escaped my observation, and managed to get one or other of the students to galvanise him 25 times before I stopped his coming; he had been free from sciatica for several weeks. Of the cases which were not successful, one patient was, after death, discovered to have extensive necrosis of the ischium, with a sequestrum of dead bone. Another, a lady, was at the time suffering from some malposition of the uterus, which was tilted over on to the side in which the pain was felt, and no doubt exercised some pressure on the roots of the nerve. Although in this case the sciatica was not cured, the patient was so much benefited that she was able to get about the house again after 8 applications. Before electricity was tried she had been confined to her bed for five weeks. With regard to the second unsuccessful case, I cannot well assign a reason for its non-improvement. The patient was a gentleman who had spent many years in the East Indies, and had suffered from dysentery and ague. He attended and was galvanised eight times, and as he was not then free from pain he did not care to continue the treatment. He tried several remedies afterwards, with the same unsatisfactory result. Perhaps if he had persevered longer with the galvanism he might have been cured, for several of the hospital patients attended as many as 10 or 15 times before they were quite relieved; but there is more difficulty in obtaining the prolonged and regular attendance of a patient who has to pay for each application than of one who gets his treatment gratuitously. The cases included in my list bear out the favourable opinion expressed by Dr. Stone, in his recent Lumleian Lectures, of the action of electricity in the treatment of sciatica. [Details of the method were published in the Lancet, January 19, 1884.] (Dr. W. E. Steavenson, Electrician to St. Bartholomew's Hospital, Lancet, July 17, p 114.)

Tetanus Neonatorum.—I wish to call attention to the following facts. Two children in the same family died of this rare disease, a healthy child having been born between them. Both died on the eighth day. The condition of the umbilical cord, at birth, in each case, was abnormal; this, I think, must in some way be connected with the occurrence of the disease. A peculiar pain was complained of by the mother in both cases, which had been absent in every other pregnancy. (Mr. Wright relates also the following case:)—Mrs. D., the mother of six healthy children, was delivered of a fine male child, January 6, 1883. He appeared to be well developed, and everything was perfectly natural, with the exception of the umbilical cord, which had three or four times its ordinary thickness, and was of a much darker colour than usual. It was of about the normal consistence. For six days, all seemed to go on well, when the parts in the immediate neighbourhood of the umbilicus became somewhat inflamed and irritable. On the seventh day, these appearances increased, and the cord separated. The child progressed favourably until the sixth day, when it refused the breast, and, about the same time, its jaws became fixed, and an occasional spasm occurred, the whole body being rigid from head to foot. These spasms soon became continuous, with frequent exacerbations, until, on the eighth day, the child died. During the last two or three months of pregnancy, the mother had complained of very violent pain in the left side of the abdomen, coming on every night when getting into bed, and continuing for several hours, which prevented her from obtaining any rest. On April 1, 1884, she was confined of a child, which is now alive and healthy. (Mr. Frank M. Wright, Bottesford, Notts., British Medical Journal, May 22, p. 973.)

Tetany in Infants.—Dr. Baginsky, at a recent meeting of the Berlin Medical Society, gave a short sketch of one of the fifteen cases of this disease that he had observed. The child was three months old, and presented the following features: The ocular muscles were intact, the facial muscles were normal. Both pectorales felt hard, and were rigid. All the muscles of the forearms were remarkably rigid. When these were touched, the phalanges became strongly flexed against the palms, and the whole hands became slightly hollow. There was no rigidity of the abdominal muscles, but the abductors and flexors of the right thigh contracted on the lightest touch. Powerful contractions of the muscles of the leg set in on exercising pressure on the crural artery; but in the left leg it was not the flexors, but the extensors, that underwent strong contractions in carrying out this manœuvre. The muscular phenomena continued for some time, and the contractions were extremely painful. During the intervals the child became quiet again. The weakest faradaic

current called forth the contractions. Later on the following conditions obtained: After the diarrhœa had ceased, convergent strabismus had set in, and the excitability was so exquisite that pressure made on any muscle was sufficient to evoke violent contractions of distant muscles. Worthy of note were also the vaso-motor disturbances; the slightest pressure on the skin left a red spot. The case ended in perfect recovery on increasing the child's nourishment. This sketch applied to the majority of the cases observed. Regarding the etiology, Baginsky remarked that all the cases occurred in the summer months, and nearly all the children suffered from dyspeptic symptoms. As the children ranged from three to four months old, dentition could not be considered as a factor in the causation. French authors had observed that tetany in children might occur in epidemics, and they held that irritation played a *rôle* in the epidemics. Baginsky did not admit this, though he had witnessed the disease in twins and in children of relatives at the same time. He would attribute the etiology in these cases to the similar conditions in which the children were placed. Two opinions obtained as to the pathology of the disease—one which attributed it to an organic lesion of the central nervous system, the other to an affection of the peripheral nerves. The prognosis was not unfavourable; the children never died of tetany. Seven of the fifteen succumbed to dyspepsia and intercurrent diseases. The therapeutics had reference chiefly to the disordered digestion and assimilation. When the attacks were attended with much pain, Baginsky found chloral hydrate enemata and warm baths, followed by the wet pack, very useful. (Dr. A. Baginsky, New York Med. Journal, June 5, p. 647.)

Urethan as a Hypnotic.—This new hypnotic appears to have properties worthy of the attention of the profession. Chemically, it is an ethylic ether of carbamic acid, and when pure, consists of white rhomboidal crystals which are readily soluble in water. Schmiedeberg experimented with it upon animals, and Von Jaksch, Jolly, and others have studied its action in man. In suitable doses it produces a deep, dreamless, natural sleep, from which the individual awakens refreshed and without the unpleasant sensations which so often accompany the use of a hypnotic. It does not appear to have any special action on the circulatory, respiratory, or excretory system. The effect of the drug seems to be exclusively upon the higher cerebral centres. Eloy, in L' Union Médicale, reviews its use in ninety cases which have been reported, including many of heart disease, phthisis, and neuralgia, in most of which it acted promptly and satisfactorily. In phthisis it seems also to allay the cough. Restlessness and insomnia, not pain, are the special indications for its administration. The dose as a sedative is from 15 to 30 grains,

and as a hypnotic 30 to 60 grains. It is not unpleasnt to take, and is best given in a single dose. If the statements regarding the action of urethan are borne out by subsequent experience, a very valuable agent has been added to the pharmacopœia—a powerful hypnotic acting on the higher cerebral centres, and without any of the unpleasant effects of morphia or chloral. (Editor of Medical News, May 15, p. 551.)

Urethan.—Dr. Kræpelin contributes a short article to the *Neurologisches Centralbl.*, March 1, on the action of urethan, or ethylic carbamate. On physiological grounds, Schmiedeberg recommended this drug as a hypnotic, and since then it has been employed therapeutically by Jolly, Von Jaksch, and Sticker. The reports upon it have hitherto been uniformly favourable. Dr. Kræpelin's experience extends to about 200 administrations in 34 patients. The dose employed varied between 1 and 3 grammes; on two occasions 4 and 5 grammes were given. The author never observed any unpleasant effect, either during or after the administration of the drug. Only in one case of alcoholic gastric catarrh, vomiting was produced by one of the large doses above mentioned. Loss of appetite, however, has never been observed, even after the employment of the drug for weeks. Urethan acts as a pure hypnotic. About ten or fifteen minutes after taking it, the patient falls into a quiet sleep, that lasts several hours, and from which he wakes without any unpleasant feeling in the head. Should this sleep be interrupted, the patient, as a rule, falls asleep again when the interruption is withdrawn. This, however, depends, of course, upon the size of the dose and on the cause of the disturbance. Urethan is not a very active hypnotic; and where there is much excitement, it is far inferior to paraldehyde, and is practically useless. In delirium tremens especially, it disappointed the expectation raised by Sticker. Perhaps, if larger doses had been given, the result would have been more satisfactory. Urethan has no power to relieve pain; hence it cannot take the place of morphia. Nevertheless, the author, like Von Jaksch and Sticker, has had excellent results from its combination with morphia in some cases of phthisis. When the drug was given in doses of 1 gramme, it acted efficiently only in 54 per cent. of the cases. When given in doses of 2 or 3 grammes, it gave a good result in about 70 per cent. Dr. Kræpelin's patients were all women, mostly suffering from mental disease. The form of alienation, where the drug gave the best results, was melancholia. Here it produced quiet sleep in 77 per cent. of cases. In the excited stages of general paralysis, it often failed to produce any effect; in 60 per cent., however, the larger doses gave a satisfactory result. Many of the patients were very anæmic. The author considers the drug especially useful in cases of mild excitement or depression,

accompanied by exhaustion or depressed nutrition. One graet advantage possessed by urethan over paraldehyde, in addition to the longer duration of its action, is that its smell and taste are not so disagreeable, and it can be taken in simple solution without flavouring agents. (Dr. W. R. Huggard, in Medical Record, April 15, p 161.)

AFFECTIONS OF THE CIRCULATORY SYSTEM.

ANÆMIA.—*Its Relation to Cardiac Disease.*—Not much is yet known about cases of valvulitis in connection with anæmia. The subject is difficult, and the less *post mortem* fruits we gather, the better. Evidence is, however, accumulating to show that, amongst the results of anæmia, a measure of damage to the mitral and aortic valves occurs. The mischief probably ensues upon the dilative changes so common in the left ventricle in cases of grave anæmia. Undue tension in the valves leads up to sclerotic change. Dr. Goodhart has well studied this subject (Lancet, March 27, 1880). The pulse is often of high tension in anæmia, as I have observed, though this is hardly as yet recognised; and if the blood-state be not soon remedied, the results of prolonged intra-arterial pressure fall upon the valves most involved. Early and active treatment is thus imperative; and I would here interpolate the remark that, in my experience, it is far too common to find anæmia treated very inadequately. Medication by chalybeates is played with in a trifling manner, and much unnecessary, and sometimes dangerous, delay in the recovery results. Dr. G. W. Balfour has called attention to this point. (Sir Dyce Duckworth, Brit. Med. Journal, July 10, p. 57.)

ANEURISM.—*Results of Electrolysis in.*—We have four results, which occur in my experience with different degrees of frequency: 1. The products are so soluble and evanescent that practically no benefit is produced by the operation. 2. The benefit, though only temporary, is yet of sufficient duration to enable us, by repeating the operation, to prevent increase of the portion of the tumour outside the thorax, and the threatened external hemorrhage. 3. The external sac is entirely occluded, but the internal portion of the aneurism advances as before, it may be in some more rapidly. 4. Steady improvement sets in, and the whole aneurism diminishes in size, and sometimes even disappears. Of these the first and fourth are rare, the second and third about equally common. I have had two cases of complete failure, and one in which apparent cure resulted, but I have had many in which impending death from hemorrhage was averted, and the patient's life undoubtedly, and sometimes greatly prolonged. If with these data in view one endeavours to assess the value of electrolysis in thoracic aneurism, it is proper to

ascertain the position it ought to hold with regard to other remedies, as well as the class of case to which it is applicable. And, in the first place, no one can doubt that a thorough trial must be given to rest and other remedies which lower the frequency and force of the cardiac impulse. Failure assuredly would show that the resiliency of the aneurismal wall and the quality of the blood were such as to be unfavourable for any mode of treatment, but the safety and proved efficacy of these medical remedies assure them precedence. (Dr. Duncan, p. 270.)

Aneurism.—Indications for Electrolysis in.—Given, therefore, cases in which a careful and prolonged trial of rest and other medical remedies have failed, and which do not appear suitable for ligature, and we have only electrolysis left. Perhaps I should still further limit its application. I would hesitate to recommend electrolysis unless the aneurism had penetrated the thoracic wall, and external hemorrhage were the death which seemed most likely. No doubt the most successful recorded cases of electrolysis are those in which the tumour has been intra-thoracic. So long as the resiliency of the sac is fairly preserved, a comparatively slight strengthening of the wall may suffice to redress the balance between internal pressure and external resistance. But the very nature of aortic aneurism makes it absurd to expect that complete cure can often be effected by the production of a coagulum. Although I should not in intra-thoracic cases always refuse the chance, I should not readily abandon medicine, and I should require to assure myself that the needles could be safely lodged, with their exposed points entirely in fluid blood, before running the risk of inflammation of the sac from contact of the needles with the wall during an operation which afforded no great hope of permanent cure. (Dr. John Duncan, Edinburgh Medical Journal, April, p. 901.)

Angina Pectoris.—*Treatment.*—M. Huchard, in an article on this subject, recognises two forms—true and false angina pectoris. The latter occurs most frequently in women at all ages, and seems to be dependent upon arthritic and gastric affections. This form is characterized by frequent repetition, periodic appearance, long duration, and the site of the pain, which is usually at the middle or inferior part of the cardiac region. True angina is more frequent in men, and comes on at a more advanced age. It seldom assumes the periodic form, it is never spontaneous, but brought on nearly always by an abnormal or exaggerated excitation of an enfeebled heart by an effort or an emotion. Its location is distinctly substernal, and the patient suffers agonies. While the pathogeny of the false form is variable, the true form has always the same pathological factor—viz., a sclerosis of the coronary arteries leading to interference with the lumen of the

vessels at their mouths, and the paroxysms are induced by a temporary cardiac ischæmia. This arterial theory is accepted by Potain and Sée. Acting on this theory, M. Huchard avoids all medicines that increase vascular tension, such as ergot, or elevate arterial pressure, such as digitalis. He relies upon the inhalation of amyl nitrite (four to ten drops) to allay the paroxysm. In some cases he employs hypodermic injections of morphine, which diminishes the blood-pressure and passively dilates the arteries, but is less rapid and less sure than the amyl nitrite. During the intervals of the attacks he strongly recommends the iodides, which he says have a curative effect, but they must be continued for fifteen or eighteen months, fifteen to forty-six grains being given daily. The sodium is to be preferred to the potassium salt, as it is more efficacious and is decidedly better tolerated by the stomach. (New York Med. Journal, June 5, p. 649.)

Caffeine in Cardiac Disease.—This is the highly nitrogenised crystalline principle, occurring in colourless silky needles, obtained from coffee, tea, or guarana, and existing in other vegetable products—e.g., the kola-nut. Caffeine is said to be a stimulant of the medulla and cardiac centres, to quicken the pulse and respiration, and to raise the blood-pressure when given in moderate doses. It may induce irregularity and intermittency of pulse; it is classed as a stimulant of the cardiac muscle. It acts as a diuretic, though not invariably so. A large number of observers have testified to the beneficial effects of caffeine in various forms of cardiac disease, but there has been by no means a consensus as to its value and as to its mode of action. Francotte found that whilst caffeine increased neither the water nor the urea excreted in the urine in health, it had a pronounced diuretic action in cases of cardiac disease. Riegel, of Giessen, concluded that it produces the best effects of digitalis upon the circulation, that it is more rapid than digitalis in its action, is not cumulative, and may be administered to the feeblest person. The following is the recent utterance of Professor Jaccoud. The effects of caffeine "are identical with those of digitalis; slowing of the heart pulsations; augmentation of its force of contraction; diuresis; no nauseous effects; no cumulative action. This drug, therefore, does not necessitate an incessant watchfulness. You can employ it in cardiac cases where the kidneys are affected." As to mode of administration. Pure caffeine is soluble in from 80 to 100 parts of water; its solubility is increased by acids. I have generally employed the citrate, which is freely soluble. It has been objected that it is a doubtful salt, but this objection is of small importance if the proportions of caffeine and citric acid used in its manufacture are definite, the only important function of the acid being to render the salt easy of solution. I employ it in from three-grain to five-grain doses, dissolved in the

ordinary saline mixture—diluted liq. ammoniæ acetatis. The dose is generally administered three times in the day, but in some cases once only. Instead of the citrate, the pure caffeine may be employed, dissolved in solutions of benzoate or salicylate of sodium; in these it dissolves freely, and thus a concentrated solution may be made for hypodermic injection. The following is a good formula for internal administration: Pure caffeine and benzoate of sodium, of each one drachm; distilled water, six fluid ounces. Half an ounce contains five grains of pure caffeine. (Dr. Ernest Sansom, p. 195.)

Cardiac Disease.—*Some General Rules for Prognosis in.*—In aortic stenosis, we have seen that the prospects are not unfavourable in many instances. In mitral disease, evidence is forthcoming to show that, with good compensation, cases may go on favourably for many years. The worst combination is that of obstructive and regurgitant disease. This commonly indicates that the lesion is not stationary; and failure of power, in the cardiac walls, too often rapidly supervenes. These cases are never free from serious symptoms. A better prognosis attaches, therefore, to instances of valvular disease in which we meet with single murmurs, and, commonly, *quâ* murmur; the louder this is, the better the prognosis. As has been long taught, the elements of prognosis in all cases are to be found in the nutritive conditions of the cardiac walls rather than in those of the valves themselves; and as these are naturally better in youth than in advanced life, the prospects are, on the whole, better for the former than the latter. We must not look beyond our clinical studies, in their widest sense, to find the elements of our prognosis. Large and varied experience in all ranks of life will alone enable the observer to form trustworthy opinions. Careful study of family histories, of the points respecting heredity in each case, and of the quality and resisting powers of the tissues of the individual, will furnish, not only the safest, but the sole means of prognostication. Nor may we ignore the place which rational therapeutics occupies in aiding our anticipations in any given case. This, for me, means more than mere drug-giving, though this is of high importance, and includes the aversion from the patient of all the malign influences that may beset him. (Sir Dyce Duckworth, British Med. Journal, July 10, p. 58.)

Congenital Cardiac Disease.—Prognosis.—Consideration of cases such as these seems to teach plainly that, in cases of congenital malformation permitting viability, without cyanosis, we may find life to be maintained over longer periods than we might naturally expect. I cannot suppose that any law prevails here to prevent the access of grave cardiac symptoms, other than may be found to explain similar conditions met with in cases not of

congenital origin. The tendency to tuberculosis associated with pulmonary arterial stenosis pure and simple, the lungs being anæmic, or with imperfect ventricular septum, remains to be duly taken note of in any given example. One lesson coming out of a study of these cases is, that we must not believe all cardiac valvular defects in early life, as is perhaps still too commonly conceived, to be of rheumatic origin. I believe, however, in the occurrence of rheumatic disease during fœtal life. (Sir Dyce Duckworth, p. 187.)

Chlorosis, etc.—*Treatment.*—It is, doubtless, of advantage that we should be able to take a wide and comprehensive view of any case; that we should plant our therapeutics upon a broad basis, and so avoid trying to adapt our remedies to every little turn and phase. We thus may hope to avoid a tinkering and feeble treatment; to avoid grasping at the shadow and missing the substance. But it is of equal importance that we should retain the power, and on occasion exercise it, of disintegrating a case into its compound parts. For it happens from time to time that what seems only a part may yet be greater than the whole. It is especially necessary to bear this in mind in the case of any disorder for which we have a reputed specific. In the anæmia of girls, both theory and experience combine to show that we have something approaching to a specific in the preparations of iron; but they do not always succeed. It is very likely that these failures may appear to a consultant to be more numerous than they do to others. A considerable proportion of the cases which come under their notice are what we may call therapeutical misfits—cases in which the diagnosis of the disease as a whole has been correct, and the treatment in full accordance with established rules. In such cases it is that we ought to cease to regard the disease as a whole and look at the details of its compound parts. Two recent examples occur to me. In one, the patient had failed to respond to a routine treatment skilfully adjusted. On analysis of the symptoms, the most striking special feature was the rapidity of the heart's action and the deficiency of arterial tension. Treatment, mainly by belladonna, regulated these, and general relief was procured. In another case, a well-marked chlorosis had not only not yielded to iron treatment, but had under it become markedly worse. Analysis of this case seemed to show that its special feature was chronic gastric catarrh. Treatment founded on this view, and mainly by ipecacuanha, was followed by immediate and progressive improvement, which has proved permanent. There is nothing very mysterious in such cases. Assuming that anæmia and chlorosis are expressions of the fact that the blood lost at the periods has not been made up, they are very clear. (Dr. W. F. Wade, Lancet, June 5, p. 1058. See also p. 353 of this volume.)

Convallaria Majalis in Heart Disease.—This plant, the well-known lily of the valley, has long been used for the treatment of dropsy in Russia, in the form of an infusion of the flowers and leaves. M. Germain Sée, of Paris, made a careful study of it as a therapeutic agent, and I called attention to its use in my Lettsomian lectures for 1883. In those lectures I said that I looked hopefully to the drug in the treatment of failure of the right heart in cases of mitral stenosis. Its therapeutic efficiency resides in the principle convallamarin, a glucoside, which may be administered in doses of from half a grain to two grains daily; on account of its cumulative tendency, only one dose of convallamarin should be administered each four hours. The following are its preparations and administration:—1. Extractum convallariæ is an aqueous extract of the flowers and stems (two parts) and roots and leaves (one part), the dose being from two to eight grains. 2. Extractum convallariæ fluidum, dose from two to ten minims. 3. Tinctura convallariæ, dose five to thirty minims. Convallaria is classed with digitalis as a stimulant of the muscular fibre of the heart, and is said to act more slowly and more persistently than the latter. Within the last two years convallaria has been extensively used in the treatment of various forms of cardiac disease. The experience of various observers in regard to it is very contradictory; so great is the discrepancy that it has been suggested that the activity of the plant varies with the locality in which it is grown. If this be a difficulty, of course it can be obviated by the employment of the active principle—convallamarin. According to many observers—e.g., Germain Sée, Bochefontaine, A. H. Smith, Labbée, Frederick Roberts, Ott, and others—very valuable results are produced by the drug in cardiac diseases. On the other hand, Leubuscher has declared that it has proved in his hands worse than useless as a remedy. Heller has also given an unfavourable report. Professor Jaccoud says concerning it:—"It is a very untrustworthy medicament, and many cases are quite refractory in regard to it. You must not count upon it, and in cases of urgency you would be wrong to fill up by its administration the intervals of a digitalis course; these you should rather confide to caffeine. If this latter is not well borne, we have no other resource than convallaria; but, I repeat, do not count too much upon it." In estimating the value of such a drug, it is most important, in my opinion, to group the cases. Those on which the conclusions of the various observers have been based were very different forms of heart disease and heart disturbance. My general conclusion is that in convallaria we have a drug which may be occasionally used with advantage in cases of mitral regurgitation; that it should be continued for no longer than weekly periods without interruption; that in cases manifesting

dropsy it should be accompanied with caffeine; but that for general and systematic administration in mitral regurgitation it will not (except at intervals) usefully supplant digitalis. (Dr. Ernest Sansom, Lancet, March 27, p. 582. See also articles by Dr. Sansom at pages 32, 38, 39, and 195 of this volume.)

Heart Disease.—*The "Mountain Cure."*—At the Leeds and West Riding Medico-Chirurgical Society on March 5th, Dr. Allbutt read a paper on this subject. After calling attention to the growing practice of recommending exercise rather than perfect rest in some cases of heart disease, and referring to Oertel's papers, he described the plan adopted in Germany of graduated exercise by ascending hills, known as the "mountain cure." The patient, under careful supervision, was urged to walk certain paths of gradual ascent. The distress at first felt somewhat subsided with the occurrence of perspiration, which, when the patient had attained his "second wind," was very profuse. The walks were extended each day; the diet was largely nitrogenous, and much fluid was drunk. Dr. Allbutt remarked that cases for this treatment must be very carefully selected, as it would probably prove rapidly fatal to cases of aortic regurgitation or atrophic conditions of heart. (Dr. Clifford Allbutt, Lancet, April 24, p. 789.)

Heart Disease and Scarlet Fever.—To sum up the connexion of scarlet fever with heart disease, I may submit the following:—1. In uncomplicated cases of scarlet fever, lesions of the heart are very rare. 2. Endocarditis is quite exceptional in scarlatinal synovitis; pericarditis occurs more frequently. 3. Acute or subacute rheumatism occasionally supervenes during convalescence from scarlet fever; an attack of scarlet fever may also be the exciting cause of a relapse; in such attacks peri-endocarditis is frequent. 4. Peri-endocarditis occasionally occurs in scarlatinal pyæmia. 5. Dilatation without valvular disease very frequently occurs in scarlatinal nephritis; peri-endocarditis and embolism are by no means uncommon. (Dr. Henry Ashby, p. 138.)

Hemorrhage from Wounds of Palm—*To Arrest.*—In wounds of the palm the persistent hemorrhage is often due to the palmar vessels being simply punctured, and not cut fairly across. Divide the artery wounded by deepening the accidental wound. Retraction of the wounded vessel takes place, and simple pressure is sufficient to arrest the hemorrhage. Check the force of the blood flow by fully flexing the forearm on the upper arm with a pad at the bend of the elbow. By these means the hemorrhage is arrested; if it still persists, plug the wound in the palm; if this fails, tie the brachial artery. (Prof. J. Chiene, Edinburgh Med. Journal, June, p. 1098.)

MIDDLE MENINGEAL HEMORRHAGE.—[The following conclusions are appended to a paper by Mr. Jacobson, in Guy's Hospital Reports. We reproduce them here only for the purpose of drawing attention to what is probably the most complete and exhaustive account of this form of intra-cranial hemorrhage yet written:] 1. That the violence which causes middle meningeal hemorrhage is often slight. 2. That in these cases no fracture may be present. 3. That where there is a fracture it is often a mere fissure, and may involve the internal table only. 4. That in severer cases, laceration or contusion of the brain are only too frequently complicating. 5. That the history of the case, and above all an interval of lucidity or consciousness, are invaluable, the latter being worth all the other symptoms put together. 6. That the symptoms of compression are in some case deferred, that their onset may be then very sudden and rapidly fatal, failure of breathing being a marked feature. 7. That in those cases where the history is deficient, especially as to any interval of lucidity, and where it is difficult to be certain about the existence of hemiplegia, dilatation of the pupil on one side, that side corresponding to the clot, is a sign of great value. The explanation of this sign, that the third nerve is being pressed upon by a clot large enough to reach into the middle fossa, we owe to Mr. Hutchinson, with whose name in future this condition of the pupil should be associated. 8. That after trephining, exposure and partial removal of the clot, very severe hemorrhage may set in and prove very difficult to arrest.—In addition to the above, the following conclusions of Mr. Hutchinson may be repeated here: "*a.* It would seem that it is not usual for a large hemorrhage to occur at the time of the injury, for almost always there is an interval during which the patient is well before the symptoms of compression come on. The occurrence of this interval is, as is well known, the most valuable fact in aid of diagnosis. *b.* It would seem probable that often hemorrhage occurs in repeated attacks. The first may cause only temporary stupor and a slight degree of hemiplegia. These may pass off and then suddenly, after some hours or even days, a sudden accession of fresh symptoms may denote a fresh hemorrhage, and may prove rapidly fatal. *c.* In cases where the bleeding is continuous, death may occur very rapidly. In these rapid cases the symptoms usually assigned to compression are absent, and failure of heart's action, with pallor, feeble respiration, and dilated pupils, are things which precede death. *d.* The occurrence or absence of hemiplegia is a very uncertain symptom. In the rapid cases it is never observed, because the patient rapidly becomes insensible, and in the more slow ones it is usually transitory, since the brain-mass accommodates itself to the local intrusion. In the early periods there is probably

always some weakness of the opposite limbs, but if such a condition is marked and persists it is much more probable that there is laceration than compression by blood." (Mr. W. H. A. Jacobson, Guy's Hospital Reports, 1886, p. 307.)

Mitral Regurgitation.—*Digitalis.*—This is our first resource, and nearly all our patients are treated by it when faults of compensation are announced to us. There is yet some lingering of the old timidity which, regarding digitalis as a sedative and depressant of the heart, would withhold it when the heart is weak. Accurate investigation has shown that digitalis increases the force of the cardiac muscle and tends to cause the arterioles to contract, by a combination of these actions raising the blood-pressure within the arteries. In a large majority of cases the careful administration of digitalis, combined with measures to promote a good general nutrition, when the early signs of imperfect compensation present themselves in cases of mitral regurgitation, is followed by such good results that it is unnecessary to seek for another agent. After a short period compensation may be restored, and then only general tonics and good dietary and management may suffice to maintain it. In a very considerable number of cases of mitral regurgitation, however, small doses of digitalis may be continued for long periods. My experience quite agrees with that of Dr. Broadbent, who says: "In mitral incompetence digitalis may be given almost indefinitely, and patients often take it for years with obvious advantage." It is quite otherwise in mitral stenosis, as we shall see hereafter. What then are the drawbacks to digitalis? They are manifest even in the early stages of failing compensation in a minority of the cases of mitral regurgitation. With some patients the drug does not agree and cannot be made to agree. It may induce faintness and sickness. In children sometimes vomiting is induced, and it cannot be persevered with. In other cases, though these symptoms be not manifested, the drug, instead of increasing the force and decreasing the rate of the pulse, actually increases the feebleness and the rapidity. In some the drug, instead of acting as a diuretic, diminishes the quantity of urine excreted, and in a few instances there may be insomnia, restlessness, and nervous disturbance. These signs of intolerance of digitalis in cases of mitral regurgitation are rare, but they are sufficient to make us cautious. It is, I think, a good rule, and one that I always adopt, never to give an adult a larger dose than five minims of the tincture (or its equivalent in infusion or the powdered leaves) three times a day for a longer period than a week without my observation. Then, if tolerence is assured, the patient may continue to take the drug, or the dose may be continuously increased. It is to be remembered that the effects of digitalis may last longer than the period of its administration.

Mr. Raven, of Broadstairs, has recorded the case of a woman aged 67, with dilatation of the left ventricle and anasarca, in whom fifteen minims of tincture of digitalis administered every four hours for five days induced diuresis and the relief of the anasarca, but symptoms of intolerance (nausea and vomiting) showing themselves, it was omitted, effervescing salines being substituted. The pulse, which had been quick, weak, and irregular, became slower, and ten days after the suspension of the digitalis it had fallen to 40 per minute. It is in the later stages, however, that the failure of digitalis is most marked. Its power of increasing the force of the left ventricle seems to be gone; the right cavities continue to dilate, dropsy may be manifestly increasing, and yet the agent in all combinations with ordinary diuretics fails to increase the outflow of urine. Then we turn perforce to other agents, such as caffeine. (Dr. A. Ernest Sansom, Lancet, March 20, p. 536.)

Mitral Obstruction.—*Convallaria.*—So far as I have been able to judge, convallaria compares favourably with caffeine in the treatment of mitral stenosis. In one case a girl, aged seventeen, in whom there existed tricuspid regurgitation in addition to mitral stenosis and regurgitation, the quantity of urine rose from a maximum of 30 oz. before the administration of caffeine to a maximum of 59 oz. during its administration, and on re-administration from 30 oz. to 54 oz.; but in regard to the pulse and respiration there was no perceptible influence. In another case of stenosis with œdema, the daily urine rose only from 36 oz. to 40 oz., and here also the pulse and respiration were not perceptibly influenced; the patient died. I was not encouraged to repeat the treatment by caffeine in the cases of mitral stenosis whilst I obtained such good results with convallaria; but in cases of this affection manifesting œdema or ascites, where a diuretic effect could not readily be obtained by convallaria, I should administer caffeine in addition. My general conclusions are that caffeine is an agent of great value in the treatment of cases of mitral regurgitation, especially those in which there is much dropsy; and that convallaria, though manifesting no very favourable influence in cases of mitral regurgitation, except as an occasional substitute for digitalis, is of considerable therapeutic importance in mitral stenosis. (Dr. Sansom, Lancet, April 3.)

Ulcerative Endocarditis.—In the July number of the International Journal of the Medical Sciences, Dr. Byrom Bramwell publishes a most elaborate and important contribution to the literature of Ulcerative or Malignant Endocarditis. Fourteen cases in all are given as the text of the paper, and in seven of these chronic valvulitis was undoubtedly present. Acute croupous pneumonia was certainly present in three cases, and

probably in seven of the fourteen cases. The frequent association of acute croupous pneumonia with ulcerative endocarditis is of great interest from an etiological point of view. In two of the three cases micrococci were detected in the exudation filling the air cells. Their identity with the micrococci of the cardiac vegetations, Dr. Bramwell could not determine, but his pathological experience clearly shows that during certain seasons acute croupous pneumonia and ulcerative endocarditis are apt to prevail. The detection of micrococci in the inflamed cerebral meninges, and in the vessels of the cerebral cortex, is very interesting, and affords a possible explanation of the nervous symptoms which are so prominent in some cases of the disease. At Dr. Bramwell's request Mr. Hare undertook some cultivation and inoculation experiments, the results of which were for the most part negative. (Eds. *Retrospect.*)

Varix.—*Treatment by Subcutaneous Catgut Ligature.*—The method of subcutaneous ligature by catgut which I introduced some years ago still appears to me the best, whether in varix or varicocele. A more extended experience has modified very slightly the views I had adopted on the strength of my first few cases. The catgut thread is passed first completely under the vein, and then by the same openings between it and the skin. After it has been knotted and cut short, the knot is buried by forcible traction on the skin. It is necessary that the catgut be strong enough to bear considerable strain, and so prepared that it shall remain unabsorbed for a considerable time. In a large number of cases I have met with suppuration only twice. In one a ligature was placed on a vein over the patella, and the suppuration was caused by the patient's getting up and moving about. In the other, by some mischance, I omitted to bury the knot and effectively cover it with wool and collodion. Fortunately, in neither did any harm result, but it is impossible to insist too strongly on the strictest antiseptic precautions in an operation dealing with veins. The last of these cases I have just seen, four years after the operation, on account of a small ulcer. The dilated condition of the minute venous radicles in the skin, which is always an important factor in the production of ulcer, remains, but the chief veins are entirely obliterated. Although free from risk, ligature is liable to that failure which attaches to all operations which involve merely section of the vessel. A vein has a wonderful capacity for restoring its lost lumen. I endeavoured to provide against this, by advising that two ligatures be placed about an inch apart on each vein. For some time I found this quite satisfactory, but it is, I now know, not always absolutely reliable. I have of late, therefore, multiplied the number of stitches considerably, and so far have been pleased with the result. (Dr. John Duncan, p. 273.)

AFFECTIONS OF THE RESPIRATORY SYSTEM.

ADENOID GROWTHS OF THE NASO-PHARYNX.—*Loewenberg's Instrument for.*—The instrument designed by Loewenberg for the purpose of removing adenoid growths appears to be a more convenient one than the forceps named after Catti, or those previously used by the author, who has abandoned them for the new knife. It consists of a knife made in the form of a segment of a circle, and with an aperture from point to point, the inner edge of the rim forming this aperture having a cutting edge. This aperture is closed by the sliding over it of a shield curved in the same manner as the knife, and much resembling the ordinary tonsillotome. The shield is worked by a to and fro sliding movement. The instrument is inserted behind the pharynx closed, the shield retracted, and the open knife sweeps over the adenoid vegetations which project through the perforation. The advantages of this knife are that it cuts only at that point of the circle in contact with the surface operated on, and cannot hurt the soft palate or neighbouring parts. It can be used upon children without the administration of chloroform. The accompanying plate will explain the mechanism of this instrument. Dr. Loewenberg informs me that he proposes to make the top of the knife in the newer instruments less pointed, and to construct it the size of a smaller segment of a circle. (Dr. F. M. Pierce, Medical Chronicle, July, p. 348.)

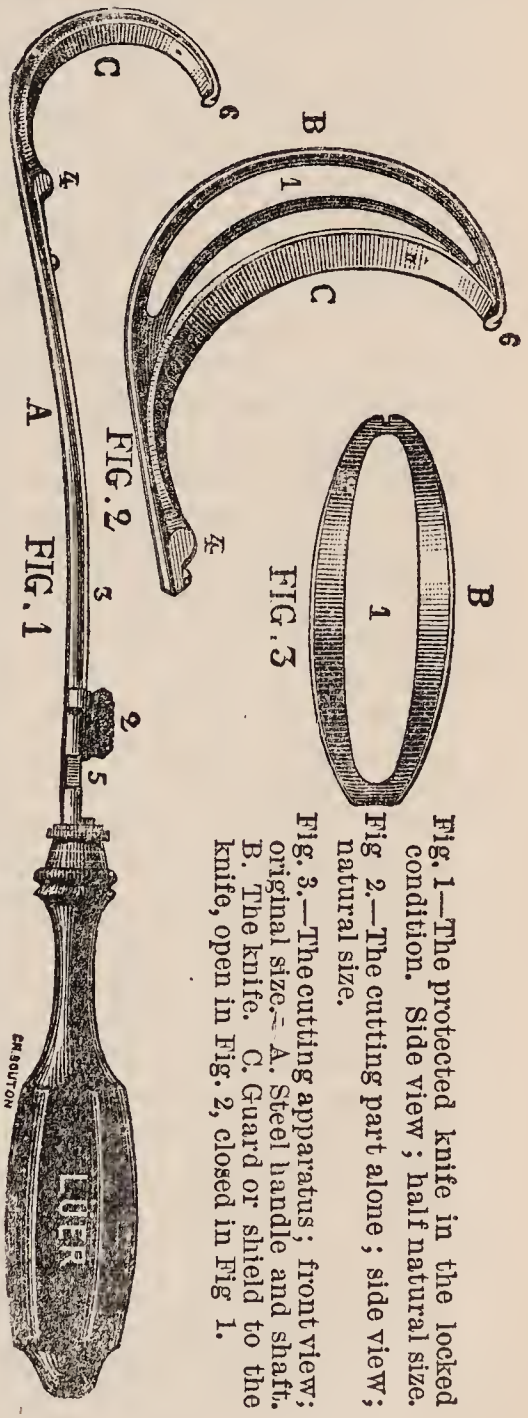

Fig. 1—The protected knife in the locked condition. Side view; half natural size.

Fig 2.—The cutting part alone; side view; natural size.

Fig. 3.—The cutting apparatus; front view; original size. A. Steel handle and shaft. B. The knife. C. Guard or shield to the knife, open in Fig. 2, closed in Fig 1.

Adenoid Disease of the Naso-Pharynx.—I often see patients who have all the characteristic symptoms of enlarged tonsils, the vacuous expression, open mouth, snoring, chronic catarrh, deaf-

ness, and so on; but on examination no tonsillar hypertrophy is present, or if there are enlarged tonsils their removal does not get rid of the trouble. In such cases, we may be sure that there is this condition of post nasal adenoids. To prove it, no apparatus is required beyond the finger, which should be passed to the back of the pharynx, turned up behind the soft palate, and warty ragged masses of excrescences will be felt, more or less blocking up the posterior nasal orifice. The treatment required is as simple nearly as the diagnosis. Much may be done by a good scraping with the finger nail, but to thoroughly get rid of these outgrowths it is better to pass a Volkmann's spoon through the anterior nares, and guided by the finger in the pharynx, scrape the adenoids away. Not seldom a second scraping is required. (Mr. G. A. Wright, Medical Chronicle, July, p. 305.)

Asthma.—*Treatment by Pyridine.*—In a communication to the Académie des Sciences, M. Sée offers the following conclusions:—1. Whatever be the form of asthma, whether nervous, emphysematous or catarrhal, primary or of gouty or dartrous origin, iodine constitutes the true cure; when iodism supervenes, then pyridine is the most certain means for curing the paroxysm; it is the palliative remedy, while iodine is the curative. 2. Pyridine is superior to morphia, its action being more reliable and less noxious. 3. In neuro-pulmonary asthma, pyridine completely cures the paroxysm. In grave asthma, complicated with permanent pulmonary lesions, the treatment must be continued from 8 to 10 days to confirm the cure. When it is a case of cardiac asthma, with or without renal or dropsical complications, pyridine may still render the greatest service in combating the most persistent and the most painful of the symptoms which afflict the patient, *i. e.*, the oppression of breathing, whether continuous or paroxysmal.—Pyridine is a colourless liquid, very volatile, with a strong smell, and miscible with water in all proportions. It is best administered by putting 4 or 5 grammes (60 to 75 grs.) of pyridine in a saucer in the middle of the room, and placing the patient at the corner of the room where he inhales the air mixed with the vapour for 20 or 30 minutes, repeating this thrice daily. (M. Germain Sée, Glasgow Med. Journal, June, p. 486.)

Bronchiectasis.—*Treatment by Paracentesis.*—At the Royal Medical and Chirurgical Society on March 23, Dr. Williams and Mr. Godlee communicated a conjoint paper on two cases of Bronchiectasis treated by Paracentesis, with remarks on the mode of operation. *Case* 1, was that of a gentleman aged 67, who had suffered for two years from chronic bronchitis and emphysema, and six months later had dry pleurisy of the left lung. After the pleurisy the expectoration, before moderate, became profuse and somewhat fetid, the cough more and more harassing, and

although Malvern and Bournemouth were visited and a great variety of antiseptic treatment was tried, he obtained no relief. On Feb. 3rd he was seen by Dr. Williams, who noted the existence of a bronchiectasis in the lower lobe of the left lung, the pleura of which was adherent. Tubular sounds were heard over two small areas, neither exceeding a half-crown in circumference, in the eighth interspace. At the request of Dr. Williams, a puncture was made by Mr. Godlee into the first area with an aspirating trocar and cannula. Under antiseptic precautions the cavity was opened and a drainage-tube inserted. The result of the operation was that the cough nearly ceased, the expectoration, which was for a few days pneumonic, diminished from one pint a day to a few pellets and became free from odour, and the patient gained flesh rapidly. At the end of six weeks the discharge ceased, the channel closed, and the wound healed up. Examination of the chest showed complete disappearance of tubular sound from the second area as well as from the first, and further shrinking of the chest wall. The patient at the close of nine months after the operation remained free from cough and expectoration, and able to walk four miles at a stretch. *Case* 2, was that of a girl aged 21, who, ever since an attack of typhoid fever, had had troublesome cough and copious expectoration, gradually increasing in quantity and becoming more and more fetid. She had had hæmoptysis three times; on one occasion amounting to a pint. Examination of the chest showed several bronchiectases, two of which gave rise to very coarse râles over areas about the size of a half-crown in the sixth and seventh interspaces in the axilla; a third area was detected in the eighth space below the scapular angle. At first the patient improved under antiseptic treatment, the expectoration diminishing and becoming less fetid, but after a while these measures ceased to give relief, and an operation was decided on. On June 29th, at Dr. Williams' request, Mr. Godlee passed a small exploratory trocar successively into each of the three marked spots, and obtaining no result, inserted a large-sized aspirating trocar and cannula into the seat of the first puncture in the sixth interspace. But an attempt to cut down on the cavity failed. A second operation was performed on July 16th, and after some exploratory punctures Mr. Godlee, with antiseptic precautions, cut down on and laid bare the eighth rib, and excised about an inch of it in order to approach nearer to the bronchi before attempting to open them. The trocar and cannula were then passed to a depth of five inches, and Mr. Godlee cut down along the cannula and inserted a drainage-tube. The wound gradually healed up and the patient left the hospital at the beginning of September considerably improved, the cough slight, the sputum having diminished to about three ounces a day, and being only

occasionally fetid. The presence of bronchiectases in other parts of the left lung, and possibly also in the right lung, precluded such complete success as was obtained in the first case.—A short account was then given of four other cases of bronchiectasis treated by tapping, in all of which the position ot the cavities had been recognised and successtully punctured, but owing to the presence of other bronchial dilatations the success was only partial in these cases. The arguments in favour of the operation are: 1. The tendency to death by septicæmia in some form, unless proper drainage is effected. 2. The reduction in the amount of expectoration, this being due, not only to the removal of the matter, but to the disappearance of the effects of its irritation on the healthy bronchi. 3. The invulnerability of the lung tissue, it being proved that punctures of this tissue give rise to little or no disturbance to the part or to the system generally. The difficulties of the operation are principally those of diagnosis of the exact positions of the bronchiectases: (1) from the presence of emphysema; (2) from the reverberatory character of their auscultatory sounds, which renders exact localisation very difficult. Paracentesis of bronchiectases seems to be indicated under the following circumstances: 1. In cases where antiseptic treatment of all kinds has failed to correct the fetor of expectoration, and to allay the harassing nature of the cough, where death by septic pneumonia seems imminent. 2. Where the evidence goes to prove that the bronchiectases are confined to one lung, are situated in the lower lobe, and have overlying them an adherent pleura. It is not indicated where multiple bronchiectases exist in both lungs, where they are surrounded by emphysema, and where the pleura is non-adherent. (Dr. Theodore Williams, and Mr. R. J. Godlee, Lancet, March 27, p. 591.)

Deviation of the Nasal Septum.—The principal point to which I should like to draw attention is that obstruction from deviation of the septum appears to arise in several different ways. First, it may be congenital, though this is more commonly seen in the bony than in the cartilaginous septum; next, it may be the result of fracture of the septum, or dislocation, from either the ethmoid and vomer, or from the nasal spine of the upper jaw below; and, lastly, it may be, as in my second case, not an immediate result of the accident, but apparently produced by a chronic perichondritis, which results in softening and subsequent deviation of a local patch of the septum. If the whole cartilage were affected there would be some flattening of the end of the nose; this, however, does not usually occur. In the first case there was possibly some congenital crookedness, and this was increased by actual displacement due to the accident. As regards treatment, Mr. Adams's plan is all that can be desired, though I find a pair of padded sequestrum forceps do just as well as his

special instrument, while a piece cut from the handle of a tooth-brush answered all purposes as a plug in my hospital patient. In some instances there is external deformity of the nose from fracture or displacement of the nasal bones as well, and in one instance a zig-zag deformity of the septum caused flattening of the tip of the nose and projection into both nostrils. (Mr. George A. Wright, p. 277.)

Diseases of the Upper Air Passages.—*Chromic Acid.*—Rethi records the use of chromic acid as a caustic application in over sixty cases, including chronic hypertrophic rhinitis, adenoid vegetations in the nasopharynx, chronic hypetrophic pharyngitis, and circumscribed swellings in chronic laryngeal catarrh. One or two crystals of the acid are placed on the end of a silver sound, which is then gently heated to remove all water of crystallization. If the heating be too rapid, or be continued till the film formed at the end of the sound assumes a green tint, the caustic properties of the acid are lost. Prior to the application the parts affected are washed with a 5 to 10 per cent. soda solution, which washing is repeated after the burning. No evil after-effects were noted in any case. (Med. News, Feb. 27.)

Hiccough.—*A Classical Remedy for.*—The method of tickling the nostrils has been tested by us in cases of obstinate hiccough, and has been very successful. Hiccough, as well as sneezing, is one of the specially modified respiratory movements, and it is quite in accordance with what we know of the transference of nervous action, that the spasmodic contractions of the diaphragm should cease on the induction of the explosive expirations which constitute the acts of sneezing. There is one point, however, which deserves special mention. It is not necessary that the stimulus applied to the nose be followed by sneezing; the application of a gentle irritant to the nasal mucous membrane may be quite enough to put a stop to the hiccough, by diverting the nervous energy into other channels, although it may not be of sufficient power to induce sneezing. (Dr. G. A. Gibson, Edinburgh Med. Journal, April, p. 914.)

Hooping Cough.—*Parasitic Origin; and Local Treatment by Resorcine.*—The author gives his conclusions upon the causes and treatment of hooping cough as follows:—"1. That hooping-cough is to be classed among the diseases which are caused by the irritation excited by the presence of parasites. 2. That it is due to the presence of micrococci, which proliferate in large numbers upon the lining membrane of the larynx and pharynx, and which infiltrate the epithelial cells, which seem to be the preferential seat of their growth and increase. 3. That resorcine in a solution of the strength of 1 or 2 per cent., applied directly to the mucous surfaces concerned, has been found, in all cases in which

it has been employed, and the results watched, to rapidly reduce the number of chinks, to reduce their intensity, and finally to lead to the cure of the disease. This last word 'cure' is a bold one, but if the first and second propositions are held to be proven, then there can be little doubt that it is properly used. For if there are no other diseases *cured*, yet certainly those which are due to the irritation of a parasite, are cured when that parasite is destroyed." (Dr. W. H. Barlow, p. 215.)

Hooping Cough.—Use of Carbolic Acid in.—Mr. W. F. Cory has recently recommended carbolic acid internally in the treatment of hooping-cough. Since then, I have used the glycerine of carbolic acid with great success among my out-patients at the Children's Hospital, Birmingham. I had previously prescribed alum, belladonna, the bromides, ipecacuanha, the salts of zinc, croton chloral-hydrate, hydrocyanic acid, etc., in different cases, but never with any very satisfactory results. I have notes of twenty-three cases treated with glycerine of carbolic acid. Half a minim in peppermint-water is sufficient for a child a year old, the dose increasing with the age. In twenty cases, relief was quickly given; the general condition of the patients was at once improved, and the number and severity of the paroxysms of coughing diminished. None of these cases attended more than a fortnight, while the usual length of attendance is certainly twice as long. In three cases, the carbolic acid failed to give relief. There was no doubt as to the nature of the illness in these cases, for in all the characteristic cough was heard, or ulceration of the frænum present. I have observed ulceration of the frænum to be present in 50 per cent. of cases of hooping-cough, and that its presence is pathognomonic of the disease. I believe carbolic acid almost deserves to be called a specific for pertussis. (Dr. C. W. Suckling, Brit. Med. Jour., July 24, p. 167.)

Hooping Cough.—Insufflation of Quinine in.—Michael (in Deutsche Med. Wochenscrift, Feb. 4,) gives the result of treatment of 50 cases by insufflation of quinine into the nose. The following powders were used: hydrochlorate of quinine with benzoic acid; 3 to 1; quinine with bromide of potassium, 1 to 4; powdered gum benzoin; tannin; boric acid; salicylic acid, in the shape of the so-called foot-powder; iodoform; cocaine; bicarbonate of soda and carbonate of lime. The most efficient were quinine and gum benzoin; then tannin and carbonate of lime. Salicylic acid, boric acid, iodoform and cocaine gave much less satisfactory results. The benefit derived from quinine was measured by the reduction of the number of attacks, although a very marked effect was also produced on the duration of the illness, and on the severity of the attacks. Improvement occurred in 86 per cent. of the cases, and a number were rapidly cured. The author

considers that we may infer that hooping cough is a reflex nasal neurosis, the reflex action depending on the presence in the nose of a specific organism. (Dr, Niven, Med. Chronicle, Sept., p. 510.)

Laryngectomy.—*Its Results.*—Laryngectomy has been performed for sarcomata five times; by Lange, Czerny, Foulis, Caselli, and Bottini. The patient of the first-mentioned surgeon lived for nearly seven months, in which case the disease not only involved the larynx, but also the gullet. The second was a lymphosarcoma, perforating the thyroid cartilage, and involving the neighbouring glands. The latter were removed repeatedly; the common jugular vein, the internal and external carotid arteries, and the pneumogastric nerve, were divided; and the patient died in high fever, with right-sided pleurisy, fifteen months after the primary operation. These two cases were clearly unsuitable for operative interference. Of the three remaining—namely, Caselli's, operated upon in September, 1879; Bottini's, in 1875; and Foulis's, in 1877—two are still alive. That of Foulis died of phthisis, seventeen and a half months after the operation. These cases, though few in number, indicate far more satisfactory results than we can find in connection with carcinomata. The other diseases for which laryngectomy has been performed, are papillomata, lupus, perichondritis, and stenosis. In some of these, no doubt, the operation was undertaken with the mistaken idea that the disease was cancer; otherwise it is difficult to comprehend why such a radical measure for the cure of disease, which might be easily remedied by less heroic treatment, should be adopted. (Dr. David Newman, Brit. Med. Jour., May 8, p. 868.)

AFFECTIONS OF THE DIGESTIVE SYSTEM.

Artificial Feeding of Infants.—My own conclusion is that the best diet for young infants who must be hand-fed is that which I have described in papers previously published, and which is so composed as to contain the various proximate principles in the proportions in which they ordinarily exist in human milk. The food is made as follows: There must be obtained packages of milk-sugar containing seventeen and three quarters drachms each. The contents of one of these packages is to be dissolved in a pint of water, and, when the infant is to be fed, there must be mixed together two tablespoonfuls of cream, one of milk, two of lime-water, and three of the sugar-water, and this, when warmed, is ready for use. The milk and cream to be used, it is hardly necessary to say, should be of the average sort; neither very poor nor adulterated, nor, on the other hand, should the rich milk or cream of fancy cattle be used, as in that case the proportions would have to be modified. (Dr. Meigs, Philadelphia, New York Medical Journal, April 10, p. 398.)

Infant Feeding.—Condensed Milk.—The success which has been attained by the use of condensed milk is but another evidence to my mind of the truth of all I have advanced in regard to the composition of human milk, for, as it is usually diluted when used as a food for young infants, it contains less than one per cent. of casein. In this fact is to be found the secret of its success, for, when most practitioners use fresh cows' milk, they do not dilute to the same extent, and give a larger proportion of casein than the infant can digest; and then, if, in disgust, they try condensed milk and succeed, it is for this simple reason. Condensed milk has, therefore, served a most useful purpose, and has, without doubt, saved many lives; but this is no reason why it should enjoy the reputation it has, when the real truth is that it can not be so good as fresh milk, if only properly used. Condensed milk can not be better than fresh milk except when the ignorance of those who are to administer it is so great that they can not be taught to use fresh milk properly, but seem, on the other hand, able to learn how to use the former. It also occasionally serves a useful purpose in cases of disease or malnutrition, when all sorts of foods have to be tried one after another until something is found that the patient can digest. (Dr. Meigs, New York Med. Journal, April 10, p. 399.)

Artificial Foods for Infants.—Biedert's Cream Mixture.—One of the best known, and one which has the advantage of having stood the test of time, is the "cream mixture," which was originally suggested by Biedert, and which consists of varying proportions of cream, water, milk, and sugar, the amount of milk varying according to the digestive powers of the infant. For a newly-born infant, or one suffering from gastric or gastro-intestinal catarrh, no milk is added, the curd contained in the cream supplying the nitrogenous constituents. In making the mixture we shall not err very greatly from the original if we direct that a quarter of a pint of cream be mixed with three quarters of a pint of warm water and half an ounce of milk sugar be added. To this two to ten ounces or more of milk may be added, according to the age or the infant's capacity for the digestion of curd. This form of food is often of service, has the great advantage of simplicity, and will often be found to agree when the infant is suffering from vomiting and diarrhœa, the stools being loose, green, or yellow, and containing much undigested curd. Various modifications will suggest themselves, such, for instance, as using barley water instead of simple water, or the addition of dextrin and maltose, such as exists in Liebig's (Mellin's) food. In a sense it is unphysiological to feed infants under six or seven months old on any form of carbo-hydrate but milk sugar, but in the majority of cases it will be found that dextrin and maltose are well digested by the smallest infants,

who thrive correspondingly upon them. (Dr. Henry Ashby, p. 230.)

Ascarides.—*Action of Various Drugs on.*—Schröder communicates to the Arch. f. Exp. Pathologie the results of his observations of the action of numerous drugs on the ascaris family. For the purposes of experimentation he used the ascaris lumbricoides which occurs in the pig, and bears the closest resemblance to the parasites of the same class occurring in man. He found that of all drugs tried, sublimate and nicotine acted most deadly on the worm; very powerful also was soda-lye, which destroys the integument of the worm. A comparatively lesser effect was obtained from the following toxic substances in the following order: Cyanide of potassium, arsenite of sodium, strychnine, conine, aconitine, and morphine, while alcohol, camphor, quinine, and all acids showed no deleterious effect at all on the insect. The observations made with santonine are rather interesting, though their results are somewhat surprising. Santonine, our author says, never kills the worm, but by some unknown reason merely forces the latter from its habitat, the small intestines, whence the worm is removed by a purge. Hence the drug does not act by its destructive but by its expelling power. Therapeutically, the inference is to be drawn from this observation that a purgative is to be given simultaneously with or immediately after the ingestion of santonine. (Prof. Schröder, Therapeutic Gazette, March, 1886.)

Cancer of Stomach.—*Examination of Gastric Juice in Differential Diagnosis of.*—The question arises how we can distinguish between pernicious anæmia and cancer of the stomach, and considering that pernicious anæmia is not always fatal, while cancer of the stomach is invariably so, the differential diagnosis is of some moment. Retinal hemorrhages and the presence of nucleated red blood corpuscles have been looked upon as pathognomonic for pernicious anæmia, yet as subcutaneous, subserous, and mucous and submucous hemorrhages occur in cancer of the stomach when the anæmia is intense (as seen in a typical case of cancer of the pylorus quite recently under my care), there is no reason why retinal hemorrhages should not be found also in such cases of cancer of the stomach as those above recorded; especially when we consider that retinal hemorrhages and even marked optic neuritis have been observed (Litten, Gowers, Mackenzie) in different forms of anæmia. Again, nucleated red corpuscles, by no means always present or always found during life in pernicious anæmia, may also occur in cancerous anæmia. There remains one diagnostic factor, namely, the absence of free hydrochloric acid in the gastric juice in cancer of the stomach. The presence of free hydrochloric acid in a case of pernicious anæmia, where the autopsy confirmed the

diagnosis, I was able to affirm. In that case, a man, æt. 38, the gastric juice—which was examined several times (once it was obtained by stomach tube and several times it was vomited almost in a pure state)—gave the characteristic reaction to be more fully described later on. The application of the test is by no means difficult. Certain precautions have, however, to be observed. If there is vomiting, especially of somewhat clear fluid, not containing blood or undigested food, the vomited matter is filtered and tested as to its degree of acidity; and if then the methylviolet and the claret test show the reaction, we may almost with certainty assume that the case is not one of cancer of the stomach. But in such cases one should never be satisfied with the result of one examination, but repeat the examination several times. If the vomited matter do not give the reaction with the above-mentioned agents, we have to examine the gastric juice obtained by help of the flexible stomach tube. The gastric juice is best obtained either in the morning before any food is taken, or two to three hours after a light breakfast. If after the introduction of the tube no gastric juice is brought out, a small quantity of water may be introduced into the stomach through the tube, when sufficient juice will be readily obtained, the addition of a small quantity of water not materially interfering with the delicacy of the test. The gastric juice so obtained is filtered and tested for hydrochloric acid, and also for lactic acid by the perchloride of iron and carbolic acid test. The presence of peptones is also to be ascertained by using Fehling's solution. (Dr. Dreschfeld, p. 223.)

Dyspepsia.—*Uses of Papaïn in.*—I find it chiefly valuable in the following classes of cases:—1. *Chronic Stomach-Catarrhs of Children.*—Everyone is familiar with that state in which we find children at times, and which is very frequently called "biliousness." It is characterised by loss of appetite, languor, pasty complexion, loss of sleep at night, and irritability during the day. There is frequently frontal headache, and the urine is loaded with lithates. If this state continue for any length of time the child emaciates, the unhealthy mucus which sheathes the stomach and intestines preventing the due absorption ofthe food. Cod-liver oil and compound syrup of the phosphates, which are generally given for this complaint as soon as the child begins to lose flesh, are not assimilated. Sometimes a cough develops, and the child is supposed to have incipient phthisis. I have found these cases rapidly improve with the following prescription:—℞. Papaïn (Finkler), gr. ½.—gr. j; sacch. lactis., gr. j.; sodii bicarb., gr. v. M. To be taken after every meal. It is also advantageous to give a drop or two of tincture of nux vomica immediately before the meal in a little water. The papaïn probably acts by dissolving the mucus, and

thus facilitating the absorption of the food. 2. *Acid Dyspepsia.*—The drug is extremely valuable in this form of indigestion. *a.* As it acts equally well in the presence of an alkali, a sufficient quantity of bicarbonate of soda may be given with it to neutralise the excess of acid in the stomach without impairing its peptonising power. *b.* Its antiseptic action checks the abnormal fermentation to which much of the accompanying flatulence is due. *c.* An antiseptic can be given with it to increase this action. I usually order it in the following manner:—℞. Papaïn (Finkler), gr. ij; sacch. lactis, gr. v. M. To be taken an hour after meals with the following draught:—℞. Sodii bicarb. gr. xv.; glycerin. acid. carbolic., ♏ viii; spirit. ammon. aromat., ♏ xx; aq. ad ℥iss. M. Fiat haustus. It appears that, taken one hour after a meal, a smaller dose of papaïn is required to produce the same result than if taken with the food. 3. *Cases where Severe Gastric Pain coming on shortly after Eating is the prominent Symptom.*—I have tried the drug upon twelve cases of this nature. Complete relief was given in ten, one case was partially relieved, and one completely failed to derive any benefit.—Apart from its internal use, papaïn will probably come into extensive use as a peptonising agent, to prepare ready digested food and enemata in the way in which pancreatin and pepsin are used at present. (Dr. George Herschell, p. 228.)

Egg Poisoning.—A very good example of egg-poisoning came under my observation in April, 1883. A young married lady, whom I was advising as to diet, remarked to me "eggs, in the very smallest quantities, are poisonous to me." She said that a sister of hers had precisely the same peculiarity, and that neither of them could take eggs in any form, or any quantity, without experiencing inconvenience. The symptoms produced were exactly those which I have noted in other cases. About an hour after taking the egg, a feeling of heat and discomfort would begin at the epigastrium, which would gradually spread over the whole abdomen. Sometimes there would be a feeling of nausea; but never actual sickness. The discomfort, which was often extreme, would last from a few hours to the whole of the day. Both the sisters had been aware of the peculiarity from childhood. It did not exist in their parents; and there was no tradition as to its having occurred in former generations. A physician, under whose care Mrs. —— had formerly been, had advised her to overcome it, and to accustom herself to small quantities of eggs taken in coffee, and the like. She had found it quite impossible to follow his advice, the wisdom of which I should very much doubt. A liability to be made ill by eggs is a form of idiosyncrasy not at all uncommon, and which causes many mistakes in diagnosis. Its subjects often never find it out for themselves, but go on taking the article which causes the

symptoms, which they seek to cure by drugs. (Mr. Jonathan Hutchinson, British Medical Journal, May 29, p. 1018.)

Fissure of Anus.—*Cure without Operation.*—1. Begin the treatment by ordering a laxative every night, so that at least two passages can be secured daily. 2. If defecation is very painful, give an enema in the morning and secure an evacuation before making any application to the fissure. 3. Touch the fissure thoroughly each day with a solution of nitrate of silver, varying from five to fifteen grains to the ounce. Do this gently but thoroughly with a soft camel's-hair brush. 4. If this fails, try the insufflation of calomel, bismuth, or iodoform, in dry powder; and, should these not succeed, lay a piece of very soft and fine lint in the sore and change it daily.—If the treatment is followed with delicacy and skill, I am convinced that it will seldom fail. (Dr. C. B. Kelsey, New York Med. Journal, April 10, p. 409.)

Hemorrhoids.—*Local Use of Cold Water in.*—The use of cold water to piles is a most valuable thing, but the majority of persons do not know how to employ it at all. Having had the usual action of the bowels, the patient almost always rises up and then goes to a basin, sits down over it, and throws up cold water, chiefly on to his nates and external sphincter. Now, during defecation the hemorrhoidal venous circlet around the anal margin is fully dilated, and the mucous membrane above it slightly everted. This condition lasts for a short time, even after the action is finished, until the patient draws himself up or rises. A patient of mine discovered for himself that the proper time to apply cold water to his piles was when they were down, and not when he had drawn them up. So as soon as the bowel was evacuated he remained perfectly still, emptied the pan of the water closet, and keeping the rush of water on with his right hand, he threw it up with his left on to the everted mucous membrane. By this means he thoroughly cleansed his piles, and, by the direct application of the cold water to them, ensured contraction of their blood-vessels and their complete retraction. Carefully drying the parts with a soft towel (and not using paper), he then washed his hands and was comfortable for the rest of the day. (Mr. Mitchell Banks, p. 282.)

Hernia.—*Irreducible Inguinal Hernia treated by Elastic Pressure.*—Dr. Elder publishes the case of a man æt. 56, under Professor Chiene's care, who had suffered from hernia for more than thirty years. The hernia consisted of bowel and indurated omentum, and when seen was irreducible. An elastic bandage was applied over the hernial tumour during 16 days with a successful result. The narrative of the case concludes with the following remarks: The two points which, I think, are worthy of notice in this case, are: first, the efficacy of the elastic pressure

in the treatment of irreducible hernia; and, secondly, the method of applying the pressure. I think the first of these is quite evident to everyone, namely, that continued elastic pressure, carefully applied, must reduce an indurated hernia in size, and, by reducing its size, must make it more easy to reduce. Secondly, as to the method of applying the pressure; at first, the bandage was applied as a single spica, but it was found that the swelling was very apt to make its way out below the bandage, by passing towards the middle line. On July 17th, however, I applied the bandage more in the form of a double spica, although not a true double spica. I began the bandage at the right anterior superior iliac spine, crossed the abdomen to below the left trochanter major, then round the thigh and across the perineum to the right groin and right anterior superior iliac spine, where it was pinned to the beginning of the bandage. Then it was wound round the back, above the iliac crests, to keep it from slipping down. I then brought it down over the hernia, on the left side, across the perineum, and round the right thigh, over the front of the abdomen to above the left iliac crest, and round the back to the right anterior superior iliac spine, where the bandage began. I then went on as before, following the same course, but making the bandage above slightly overlap the one below, until I got all the pubic region covered, except a small space in the middle line for the penis. This opening, which always weakens the pressure, must not be too large, otherwise the hernia will tend to escape through it. I consider that it was the altering of the method of putting on the bandage, that had such a wonderful effect in this case. This bandage had only been once on when the hernia disappeared. Another point is, that enough wadding must be used, in order that, when the bandage is on, it may not pain the patient, and in order that the pressure may be equal all round the hernia. It is not necessary to put the bandage on very tightly, as it gradually becomes tighter the longer it is kept on. The different layers of bandage must be pinned to each other, to prevent them from slipping out of their place. (Dr. Wm. Elder, Edinburgh, British Med. Journal, May 8, p. 873.)

Strangulated Hernia.—New Method of Reduction.—Dr. Nikolaus proposes the following method in place of taxis. He points out that in reducing a strangulated or incarcerated hernia the end can be much more readily obtained by traction from within the abdomen than by pressure applied without that cavity. He cites cases where taxis had failed during life, but where after death the gut was readily reduced by dragging upon it after the abdomen had been opened. He draws attention to the frequent failure of taxis, and supports his arguments with reference to traction upon a series of experiments with gut held in an artificial opening. After reviewing the various plans of reduction

by posture, he advises that the patient be placed in the knee and shoulder position. Both knees rest upon the bed, the femora are kept in the vertical posture, and the shoulder of the sound side is supported also upon the couch. Before this posture is assumed the bladder and rectum may be emptied, and while it is maintained gentle pressure may be kept up on the swelling. The position may be persevered in for twenty or forty minutes, or longer. Dr. Nikolaus maintains that it relieves the circulation in the strangulated part, that it reduces the intra-abdominal pressure, and causes the weight of the mass of intestines to act by traction upon the segment of gut retained. He gives cases to show that this method has succeeded after taxis under chloroform has failed. The procedure is certainly more reasonable than that by taxis, and is worthy of extended trial. The author thinks that it is of no use in cases of internal strangulation. (International Journal of Med. Sciences, July, p. 230.)

Intestinal Obstruction.—*Treatment.*—After narrating a case of intestinal obstruction successfully treated by laparotomy, Dr. Randolph Winslow, of Baltimore, says, "I wish to express my opinion decidedly against any and all severe methods of attempting to overcome the obstruction, whether by rough manipulations, or by rectal injections under strong pressure. On the other hand, I deprecate resorting to operation until a fair trial of medical means has failed to relieve the condition, and until it is reasonably certain that there is some mechanical hindrance to the passage of the fæces, which will terminate fatally unless relieved by operation. For obstruction in the large intestine colotomy would in many cases afford relief. For persistent obstruction of the small intestine, my preference is decidedly in favour of laparotomy in the linea alba below the umbilicus, under rigid antiseptic precautions, as being the most precise, scientific, and rational means of discovering the cause and seat of trouble, and of remedying it at the same time. Whilst I am not one of those who underrate the risks of laparotomy, I do not think an exploratory incision to be a more serious procedure than abdominal taxis, or enemata under heavy pressure, and I do think it much more certain and reliable in its results." (Dr. R. Winslow, International Journal, April, p. 418.)

Iron Preparations.—*Intestinal Concretions from Large Doses of.*—The preparations I have found to cause symptoms of obstruction are as follows, namely: Ringer's pill of 5 grains of dried sulphate of iron = 9 grains of ordinary sulphate; half-drachm and whole drachm doses of tincture; mistura ferri composita, P.B., made so strong as to contain 8 or 10 grains of sulphate of iron and carbonate of potash in each dose. Any of these, if given three times, or even twice daily, for from one to two

weeks, and if natural or artificial diarrhœa do not in the meantime wash out the quantities of insoluble sulphide, will cause severe colic and constipation, which morphine and turpentine stupes seem unable even to alleviate, and which, it seems to me, would continue indefinitely, or till death, if not removed by a smart saline purge, or other means. I have seen twenty-four hours of rhythmic agonising pain, very like labour, with nearly constant vomiting, no sleep or ease, after a grain of morphine by the mouth, the temperature rising to 101° Fahr., and a great depression of all the powers of life, from a couple of weeks' course of Ringer's pills, which had done immense good to the system at large. This has not occurred once only, but dozens of times, so that I now expect it, and provide against it. As soon as ever a large dose of any saline—I prefer an ounce of sulphate of magnesia—has well acted, all symptoms rapidly disappear. At this time, and for twenty-four hours after, the stools seemed composed half of dirty water and half of black sand. I think this latter fact explains the pathology of the matter. In fact, it is a real obstruction—an acute one, too—by quantities of insoluble sulphide of iron. The quantity of this black sand, which comes away when severe constipation and colic have occurred, is surprising. It seems to be much more in quantity than the whole iron ingested, although the stools have been jet black all along, through excreting the sulphide. (Dr. J. Strahan, Belfast, p. 237.)

Koumiss.—Koumiss may be made in the following way:—A pint of buttermilk or a bottle of koumiss is added to a gallon of new milk in a basin. This is stirred steadily round in one direction for a quarter-of-an-hour, and covered up for twelve hours, when it is again stirred in the same direction for another quarter-of-an-hour. It then stands for twelve hours more, covered up from dust, when it is put in champagne bottles, and the corks tied down. After a few days it can be used, being well shaken before opening, and care being exercised in opening the bottles. (Medical Chronicle, June, p. 227.)

"Milk Wine" (Kefir).—The following method of making Kefir is taken from an article by Dr. Rogelmann, of Graz, in the Deutsche Med. Zeitung:—"One volume of buttermilk is to be mixed with one to two volumes of sweet milk, poured in a bottle, and allowed to stand. In three hours active fermentation will set in, which in about three days will be at an end. The product is a fluid smelling like wine, and containing alcohol, carbonic acid, lactic acid, and caseine. The following precautions are to be observed in this in every way simple and inexpensive procedure. The sweet milk used ought not to be wholly freed from the cream, and the bottles ought to be of a size that the milk

fills only two-thirds of them. The fermenting milk is to be shaken daily vigorously (about three or four times), during which manipulation a cork is to be placed firmly in the bottle, but removed after the shaking in order to allow the carbonic acid to escape. The opened bottle is to be placed in a horizontal position at least twice daily for a period of ten minutes, in order to let fresh air take the place of carbonic acid, and to thus prevent the stoppage of fermentation. If a very effervescent liquid be desired, the bottles are toward the close of the fermentation process allowed to stand continuously in a perpendicular position. In order to obtain new quantities of this "milk wine," we add to a certain quantity of sweet milk one-fifth its volume of milk thus fermented, and are so able to continue this production *ad libitum*. The most favourable temperature for the preparation of this milk-wine is 15° (C.)." (Med. Chronicle, June, p. 227.)

Perforation of Intestine.—*Tympanitic Resonance over Liver in.*—This is a most important physical sign. It cannot be relied upon, however, as positive evidence of perforation. Liver flatness may be absent, and a tympanitic resonance be present, and yet other conditions than perforation may have brought about this change. Sudden distension of the colon, which may force the anterior border of the liver upward against the anterior wall of the chest, will, according to Prof. Janeway, cause the percussion note to be tympanitic over the normal area of liver flatness. In this event, the liver flatness is posteriorly greater than normal, provided that there is no marked emphysema of the lungs. *Persistence of liver dulness, or flatness on percussion*, Prof. Flint regards as of much importance as evidence against perforation. He has found that the injection of a small quantity of air into the peritoneal cavity in the cadaver causes the hepatic dulness or flatness over the liver to disappear, a tympanitic resonance taking its place. Clinical observations have shown that gas escaping from an intestinal perforation gives rise to a tympanitic resonance in the hepatic region. A tympanitic resonance in this region, however, is not proof of the presence of air or gas in the peritoneal cavity, inasmuch as this resonance may be caused by the transmission of resonance from the colon above the lower margin of the liver. But, if dulness or flatness over the liver persists, it may be concluded with positiveness that the peritoneal cavity is free from air or gas. (Dr. F. S. Dennis, New York, p. 291.)

Pruritus Ani.—*Treatment.*—There is a method of treatment which I do not think is spoken of in books, but which I have tried in two or three cases with great success. This consists in anæsthetising the patient, and then with the big bulb of a thermo-cautery, heated to a white heat, lightly running over the

whole affected surface, so as to produce a superficial burn. This seems a rather severe remedy, but then the disease is sometimes a very dreadful one, and makes the lives of its victims almost intolerable. Now, the look of the cautery is much worse than the reality, and a bit of lint kept moist with a solution of carbonate of soda, soon takes the smarting away. I do not know if others have tried this plan, but it is an excellent one, and may be resorted to with tolerable confidence in aggravated cases. Deep cauterisation is not required, merely a superficial frizzling. (Mr. Mitchell Banks, p. 284.)

Pruritus.—Spray for.—Dr. Hardaway (Journal of Cutaneous and Venereal Diseases) has in generalised pruritus had good results from spraying a lotion of the following sort: Carbolic acid (three to four drachms), glycerine (one ounce), and water, a pint. After the bottle of the atomiser has been filled, he sometimes directs the patient to add from five to ten drops of oil of peppermint. The atomiser bottle should be thoroughly shaken before the bulb is compressed, in order to diffuse the peppermint through the mixture, as otherwise it would merely float on the top. In many instances the spray is far superior to mopping on lotions with a sponge or rag, being neater and less troublesome, getting the remedy more evenly and uniformly applied over the surface, and usually giving more speedy relief. (Med. Record, April 15, p. 162.)

Psoriasis of the Tongue.—*Treatment.*—In treatment much depends upon the stage and form of the disease, for, as intimated, the diathetic forms and the early stages of the idiopathic variety are the more likely cases to be cured by treatment. If we find that we have to deal with a gouty manifestation, colchicum and the alkalies must obviously be our main dependence: if the disease appears in a person much debilitated from any cause, the cause must be sought and treated; if a cutaneous eruption coexists, our remedies should be addressed to it as the probable *fons et origo mali.* If no such indication can be found, we may feel pretty confident that constitutional measures will avail but little, if at all. Authorities do not all agree that the affection in its confirmed idiopathic form is incurable, but such is the general opinion, and the main reliance is upon topical measures. In the exact use and kind of local applications there is some diversity of opinion, but upon one point all agree, namely, *in avoiding escharotic and irritant applications.* All experience goes to show that caustics increase the tendency to a cancerous transformation. (Dr. P. F. Harvey, International Journal, July, p. 116. See also page 328 of this volume.)

Pyrosis—*Powder for Use in.*—Monin records favourable results from the exhibition of the following powder in cases of heartburn: Pulverized phosphate of zinc, 10 parts; calcined magnesia, 3

parts; pulverized vanilla, 1 part. Mix. A teaspoonful in a wineglassful of water. (Medical News, March 20, p. 323.)

SACCHARINE.—An ill-chosen name for a very sweet coal-tar derivative, for the term has hitherto belonged to an altogether different body. "Saccharine" is benzoyl-sulphonic-imide, and can be artificially prepared. It has an intensely sweet taste, and the possibility of its displacing cane sugar makes it interesting. Dr. Stutzer, of Bonn, has asserted that the new principle is absolutely innocuous in the system, from which it is speedily eliminated by the urine. (Lancet, April 10, p. 709.)

Saccharine.—Medical Uses.—At the Manchester Medical Society, on Feb. 17, Dr. Dreschfeld showed some preparations, and spoke of the therapeutic uses of this new sweet compound (benzoic sulphinide, or anhydro-ortho-sulphamin benzoic acid) obtained from coal-tar. This body was prepared by Dr. Fahlberg, of New York, and its physiological properties had been recently studied by Stutzer and Mosso. Saccharine was a white powder, of acid reaction, soluble in 500 parts of distilled water, and a little more soluble in alcohol and ether. It was intensely sweet, and a dilution of 1 in 10,000 had still a very sweet taste, very much like that of sugar, together with a peculiar bye taste like bitter almonds (solution of sugar lost its sweetness in a dilution of 1 in 250). Saccharine, when given internally or subcutaneously, was exuded completely by the urine in an unaltered state; it was, therefore, not decomposed in the body. Neither the saliva nor the fæces contained any traces, even after large doses. It had scarcely any retarding effect on the digestion of either proteids or hydrocarbons; in fact, given in small quantities, it increased the diastatic action of malt in the presence of sugar. It had no injurious effect if given even in large quantities (2 to 5 grammes) in man, and produced no appreciable alteration in the appetite. The urine showed no alteration during its administration either in specific gravity or quantity. The urea and sulphuric acid in the urine did not show any changes. The urine had, however, an intensely sweet taste, and did not undergo fermentation readily. Saccharine was slightly antiseptic. Beyond being a substitute for sugar, it possessed no therapeutic properties, except that, in two cases of acid dyspepsia, it relieved some of the troublesome symptoms. Its use was indicated in diabetes and obesity. In diabetic patients, it had no effect either on the quantity of urine or on the amount of sugar passed. (Dr. J. Dreschfeld, British Med. Journal, March 13, p. 499.)

SPLENECTOMY.—At the Royal Medico-Chirurgical Society, on April 13th, Mr. Thornton read a paper on two cases of Splenectomy. This paper contained a detailed record of a case of splenectomy for cystic spleen in a girl of nineteen. The pedicle

was ligurated with silk and the ligatures cut short. The operation was performed with full antiseptic precautions. The patient made a complete recovery, and is now in much better health than before the operation. Another case of splenectomy for hypertrophy of the spleen was also related. In this case there was retraction of a small artery from the middle loop of the three ligatures, with hemorrhage into the omentum and remarkable general oozing, and cyanotic condition of the patient who apparently rallied from the operation, but died from internal hemorrhage in five hours and a half. Tables of eleven successful and twenty-three unsuccessful splenectomies, with four successful partial splenectomies, were appended, with remarks on the causes of success and failure. All the cases in which leukæmia was present were fatal, and operations under these circumstances are, the author contends, unjustifiable. Credé had collected most of the cases in a paper in Von Langenbeck's *Archives*. Splenectomy for hypertrophy of the organ was not so favourable for operation as wandering spleen or cystic disease of the organ. (Mr. Knowsley Thornton, Lancet, April 17, p. 739.)

Tongue and Mucous Membrane.—*Papayotin in Diseases of the.*—Schwimmer, the well-known dermatologist, of Budapest, speaks favourably in the Wiener Med. Wochenschr., of papayotin in certain affections of the tongue and mucous membrane. After referring to the value of the drug in rapidly softening and loosening the diphtheritic membrane, in the strength of a 5 or 10 per cent. solution, as shown by the observations of Koths and Asch, Krause and Fränkel, the author dwells upon leucoplakia buccalis characterized by peculiar patches of diseased and thickened epithelium, and the difficulty of its cure in many cases. He alludes to the inefficacy of vaunted remedies, such as solutions of soda, corrosive sublimate, chromic acid, nitrate of silver, alcohol, and ether spray, and, finally, lactic acid, which has been recently recommended by Dr. Joseph, of Berlin. Schwimmer has had a large experience with leucoplakia, which is in this country a rare disease. Twenty-five cases are alluded to, brief notes of ten of these being given in tabular form. The opinion is expressed that from an experience of two years with papayotin it is a remedy which acts happily on the free epithelium, allays pain, and aids the healing process. It is recognized that in the course of this disease, so long as the continuity of the epithelium remains unbroken, no subjective symptoms are usually present; but that, as the process proceeds, and accidents, fissures, or ulcers occur, more or less pain is experienced. In other idiopathic ulcerations and fissures of the tongue also the author has found papayotin of value. One case of tuberculosis of the tongue is cited, in which it acted most satisfactorily. The following formula was employed: ℞. Papayotin, 0.50-1.0; glycerinæ, aq.

dest., āā 5.0. The surface, after being dried, is painted from two to six times daily with a soft brush. The purest papayotin should be employed, there being in the market much that is adulterated. The explanation of the working of the drug is found in its remarkable digestive action upon the loose and diseased epithelium, causing this to be cast off, thus allowing a healthier epithelial reproduction and healing to take place. (Professor Schwimmer, International Jour. of Med. Sciences, July, p. 270.)

Tubercular Ulceration of Palate.—At the Clinical Society on March 26th, Mr. Clutton read the notes of a case of Tubercular Ulceration of Palate, which was illustrated by drawings. The patient was a girl aged fifteen, who had been under his care about nine months. Her family history gave no evidence of a phthisical tendency. In her previous history it appeared that she had been in the Evelina Hospital for six months under Dr. Goodhart, who had described her condition in his book on Diseases of Children as a typical case of scrofula. In July, 1885, a year after leaving the Evelina Hospital, she was sent to Mr. Clutton at St. Thomas's Hospital by Dr. Rugg. The soft palate was then found to be divided by a median cleft, and the whole of the surrounding tissues swollen and superficially ulcerated. The surface was finely granular, and numerous small pit-like ulcers were distributed over the hard palate at a distance from the median fissure. The glands beneath the jaw were large and hard, as also were those in the left groin. The lungs, examined by Dr. Acland, were reported to be fairly healthy. During September the surface of the palate, previously ulcerated, almost entirely healed, but one auditory canal and the interior of the nose were found to be affected with a similar condition. In October the larynx was examined by Dr. Semon, when the epiglottis and arytenoid cartilages were seen to be ulcerated in the same manner. In November the lungs were found by Dr. Acland to have undergone a marked change, the right apex showing signs of active disease. The temperature, taken regularly about this time, recorded only a slight rise of the thermometer at night. In February of this year the palate had again broken down, and was occupied by three deeply cut ulcers. The right cheek also was now covered with scattered scaly papules, like the early stage of lupus. In March the lungs were found again to have improved, showing no distinct physical signs of disease. The palate also had again begun to heal. The secretions and small portions of the diseased surface were frequently examined by Dr. Acland and Mr. Ballance, but no bacilli were at any time found. (Mr. H. H. Clutton, Lancet, April 3, p. 639.)

Whey.—*A New Curdling Fluid for.*—Whey is frequently of much use in acute diarrhœa or vomiting in infants, or, when used for

diluting milk, it forms a food which agrees well when other milk-foods fail. It has one disadvantage, however, namely, that it is not easy to prepare, unless some reliable curdling ferment is at hand. Calves' stomach can rarely be obtained, either in town or country, when wanted, as it generally is, in a hurry; and, moreover, unless used quite fresh, it is apt to set up lactic fermentation in the whey. Essence of rennet, when made with brine, is quite unsuitable for preparing infants' food; and the sweet essences of rennet, as I can testify from experience, are not reliable, some specimens proving quite inert. Under these circumstances, it may be well to state that Mr. Benger has recently prepared an exceedingly active and reliable curdling-fluid, which I have put to some crucial tests, and believe it will be found very useful in preparing whey, and will supersede the use of rennet, or any of the essences. For the preparation of white wine whey, it will be found far better to prepare the whey first, using some of Benger's curdling-fluid, and then adding some alcohol in the form of sherry, or, still better, brandy. It must be within the experience of many that some sherries fail to curdle the milk in the usual way; some of the inferior acid sherries being the best for curdling the milk, but the worst for the patient. (Dr. H. Ashby, British Med. Journal, July 24, p. 167.)

AFFECTIONS OF THE URINARY AND GENERATIVE SYSTEMS.

Albumen Tests.—At the Clinical Society on May 28th, the Albumen Test Committee presented a report of the work accomplished by them, which, according to custom, was received without discussion. In it the committee briefly reviewed the various modes of urinary testing for albumen in common use, and compared in turn Dr. Oliver's test-papers, Dr. Johnson's picric acid method, the potassio-mercuric iodide and acid, Dr. Pavy's pellets, the acid brine method, picric acid and brine, the acetic acid, and the nitric acid methods. The portability and delicacy of reaction of Dr. Oliver's papers were strong recommendations, but, apart from the question of easy carriage and compactness, the committee considered that nitric acid was most reliable and delicate. All the methods were said, however, to be respectively useful for the determination of the various proteids that might be contained in urine. (Lancet, June 5, p. 1068.)

Albumen Test.—Heller's Method Improved.—After enduring a great deal of discomfort from the usual methods of applying this test, I have come to the use of the following method exclusively: In the first place, take a very small test-tube—for the smaller the tube the smaller will be the meniscus at the junction of the liquids, and which of itself will obscure small amounts of albumen

in a large tube—one about $2\frac{1}{2}$ inches long and $\frac{1}{3}$ inch in calibre is the best size. Next fill the tube one-third with nitric acid. Finally, but most important—according to the transparency of the urine—fold one or more 3 to $3\frac{1}{2}$ inch diameter filter papers twice, thus making a funnel, and insert its point into the mouth of the test-tube, supporting it by the forefinger of the hand holding the tube. Then pour into the funnel about a drachm of the suspected urine; it will slowly filter through the paper, and no matter how cloudy before, will run down perfectly clear upon the acid, and, should albumen be present, show it as a sharp-cut white ring at the junction of the two liquids. By this simple procedure, not only are the necessary conditions most perfectly fulfilled, but much smaller percentages of albumen can be demonstrated, and in a much more satisfactory manner, than by any other method of using this test. (Dr. T. S. K. Morton, Medical News, May 8, p. 515.)

"Catheter" or Urinary Fever.—In my own mind, I am satisfied that this fever results from urethral shock communicated to the sensitive excretory apparatus of the kidney through the nervous system, and causing all degrees of suppression of urine, from the merely momentary up to the most complete and absolute. We all know that, anatomically, the genito-urinary organs are closely connected with the cerebro-spinal and sympathetic nervous systems, and therefore with all the organs of the body, and especially with the kidneys. Physiologically and clinically, we know that, when an urethral instrument is passed for the first time upon a man, it is occasionally followed by alarming symptoms; and not unfrequently, in the space of a few seconds, the patient may be writhing on the floor, in all the unsightliness of an epileptiform seizure. A much commoner example of the remarkably close connection between the genito-urinary organs and the general nervous system is the excitement produced in the former organs by a single erotic thought. Death from shock has immediately followed amputation of the penis; and I have known rigor, with complete suppression of urine, lasting for twenty-four hours, and verified by the use of a small catheter, follow the passage of a bougie rather larger than ought to have been passed through an urethral stricture. The nervous origin of the fever explains satisfactorily what we constantly observe in practice, that, the more sensitive and cultivated the nervous system of the patient, the more readily does he suffer from this fever; for example, the medical man and the artist suffer more than the labourer. I am also of opinion, as the result of much observation and practice, that the amount of fever following urethral interference is directly proportionate to the amount and character of the instrumentation inflicted; and it is a very practical point, and all in favour of the theory I accept,

that instrumentation, when made under the influence of morphine, is often made without fever in cases where fever is sure to follow if no drug be employed. In proportion to the amount of shock communicated to the kidney, the blood in the general circulation becomes more or less loaded with urinary elements; fever is produced; and, if the kidneys do not speedily recover themselves, it is easy to see that soon the patient may be in danger. In the firm belief that this explanation of the fever is the correct one, I do not term it catheter-fever, for the reason just given; nor urethral fever, because the kidney may suffer shock in other ways than through the urethra; but I prefer, as Sir Henry Thompson does, the name *urinary fever*. (Mr. G. Buckston Browne, p. 296.)

DIABETES.—*A New Diabetic Loaf.*—At the Edinburgh Medico-Chirurgical Society, on Feb. 3rd, Dr. Sloan showed a new diabetic loaf made from "Crude Gluten," manufactured by the Health Food Co., New York. He said that he would like to bring before the notice of the Society what he might call a new diabetic loaf. For the past few months he had had occasion to diet a friend of his suffering from diabetes, and for the first time, he thought, thoroughly realized the great difficulty of supplying a truly satisfactory substitute for bread. His attention was directed to the "Crude Gluten Flour," prepared by the Health Food Co., and from this the loaf he now exhibited was made. Though not absolutely free from starch, it contained less starch than any other bread allowable in diabetes. It was highly palatable, and, at the same time, very nourishing. Professor Austin Flint had used it in many cases with the most satisfactory results, and the experience of the Health Food Co. extended over many thousand cases, to only a very few of which it had to be denied. He had used it regularly for the last four months in the case of a patient, aged 60, where the sugar, on two occasions for a week or so had entirely disappeared, and where a careful quantitative analysis from almost daily observations had at no time showed any increase. Even more palatable than the bread were the scones made from this flour. These were best made with sweet milk and ordinary baking powder, and fired in a very hot oven. They were much better than those made from pure gluten flour, which had a bitter taste, and soon became very tough. His object in showing these preparations was to induce those who had diabetic patients, either in private or in the wards of the Hospital, to give them a fair trial, when he was certain, that far from proving injurious, they would be found to be as beneficial as they were sure to be welcome to the self-denying sufferers. The bread and flour were obtainable from Mr. James Clark, 30 Greenside street, Edinburgh. (Dr. Allen Thompson Sloane, Edinburgh Med. Journal, April, p. 956.)

Fehling's Solution.—*New Method of Preparation.*—M. Schmiedeberg (Amer. Journal of Pharmacy), uses mannite in place of Rochelle salt in making Fehling's solution. He claims that the addition of mannite insures stability to the solution. His formula is as follows: Dissolve 34·632 grammes of crystallised copper sulphate in 200 ccm. of water: to this solution is added a solution of fifteen grammes of very pure mannite in 100 ccm. of water and 480 ccm. of solution of caustic soda (1·145), and, lastly, sufficient water to make one litre. (Practitioner, June, p. 458.)

Hydrocele—*Results of Incision as a Means of Radical Cure.*—The small percentage of failures after the antiseptic incision shows it to be, in my opinion, incontestably the *surest* way of curing any form of hydrocele; and, if we add to the operation the extirpation of the tunica vaginalis, the method would be absolutely free from any recurrence. But it is certainly not without risk. Even with its small percentage of deaths—·82 per cent.—it makes a wound of considerable extent, which exposes the patient to all the accidents of wound-healing; it necessitates, if one acts with due caution, longer confinement to bed, and demands rigorous attention to, and every facility for, antiseptic treatment. In view of these considerations, I shall be disposed in the future to reserve the operation for cases in which the injection method has failed, or to perform it only upon patients who, with knowledge of its chances, prefer to take them. As to the relative merits of the carbolic-acid and iodine injections, I have no opinion to express based on personal experience, but, from the experience of Weir, Keyes, and others, I should feel warranted in adopting the carbolic-acid, and in sticking to it till it is proved less satisfactory than it seems to be at present. But I believe that the possibility of failure or of an *early recurrence* should never be left out of consideration in recommending the injection of either agent, and that we should be prepared with every antiseptic precaution to perform successfully the only truly radical operation—that of extirpation of the parietal tunica vaginalis. (Dr. W. T. Bull, p. 314.)

Idiopathic Œdema of the Scrotum followed by Sloughing.—The author publishes an example of this rare affection, and makes the following valuable remarks upon the case:—"This case is an interesting example of a disease which is very apt to be confounded with extravasation of urine, and the notes may be compared with those of similar cases recorded in the Lancet of July 25th, 1885. The diagnosis from extravasation of urine may be made, indeed, without much difficulty; but the superficial likeness in the two cases is very close. Apart from the history, the less marked hardness and tension of the scrotum, with the absence usually of any tense swelling in the perineum, in the erysipelatous cases will raise a suspicion of the nature of

the disease, and the passage of a full-sized catheter without difficulty into the bladder will complete the diagnosis. In the present instance the extension of the cellulitis with suppuration to the abdominal wall above the line of Poupart's ligament is of much interest in connection with the other points of similarity in the two groups of cases. The benefits arising, in what seemed a hopeless case, from free incisions of the abdominal wall, both in preventing extension of the disease and, subsequently, with free drainage, in allowing the escape of decomposing fluid, which, tracked from the scrotum nearly to the loin, were most marked. In many cases erysipelatous sloughing of the scrotum seems indicative of some profound deterioration of the general health. The patients whose cases were recorded last year both died; one within a few hours after admission into the hospital, and the other within a week or two of going to a convalescent home. The present case—a much younger patient—seems to be an exception, if one may judge from the apparently complete restoration to health which took place before his leaving the hospital." (Mr. Morrant Baker, Lancet, June 5, p. 1067.)

Lithotomy.—*Hemorrhage in.*—However it occurs, whether from the transverse artery of the perineum, from the bulb or its artery, from the venous plexus around the prostate, or from the separation of sloughs at a later period, bleeding, to any considerable extent, is a real evil, and may prejudice the recovery of the patient, either by its lowering effect on the vital power, or by the indirect effect of the means adopted to arrest it. Combined to the shock of a great operation, it may cause death in a day or two, or, by its repeated occurrence, in one, two, or three weeks. I notice that, out of these forty cases of hemorrhage, there were twelve deaths, and some of them I attributed to the consequences of the restraining plug. Whether we use the air-tampon or the umbrella-cannula, or, as we in Norwich prefer, simply long pieces of dry lint, pushed carefully in alongside the silver tube, there is this risk: the plug prevents the flow of blood externally, but it is well-nigh impossible to plug a lithotomy as effectually as an ordinary surgical wound, and the blood is apt to infiltrate into the cellular tissue in the pelvis, and extend sometimes along the ureter towards the kidneys, or around the bladder towards the abdominal wall, even so that a faint yellowish colour, as of a bruise, may appear on the skin, near one groin. Decomposition may take place in this extravasated blood, and lead to pelvic cellulitis and abscess. So much objection have I to a plug of any kind, that I have often in hospital-practice, where a surgeon and good nurses are at hand, put a piece of ice into the wound, held it there with a sponge, and allowed the patient to be removed to bed while some degree of bleeding was still going on. Frequently, the oozing, free though

it be, will cease in an hour or two; sometimes, however, it will cease at first; and, as reaction comes on, so does the straining and expulsion of clots. Then, when it is clearly shown to be necessary, the plug is resorted to, and seldom fails. Bleeding which comes from a deep source and passes into the bladder, and is expelled with straining, in the form of coagula chiefly, is very difficult to deal with; the tampon or plug will scarcely arrest it, and the only caution I can give is to keep the bladder as quiet as possible, by passing a large soft catheter through the wound as often as necessary. It may be kept in permanently, but, when this is attempted, it is apt to become choked with blood and inefficient. It is possible that moderate dilatation of the whole wound by a Todd's rectum dilator, or by a full-sized gum elastic bougie, having a central passage for a catheter, as recommended by Mr. Reginald Harrison, might succeed in these troublesome cases; but I have no experience of either of them, nor have I any of the injection of hot water, which has been found so efficient a hæmostatic in other wounds. (Mr. Wm. Cadge, British Med. Journal, June 26, p. 1205. See also pages 304—314 of this volume.)

Lithotomy.—Wound of Rectum in.—Wound of the rectum is an accident which, I suppose, has occurred to all lithotomists; generally it betrays a fault on the part of the operator, but it may be an unavoidable incident due to sloughing, following the extraction of a large stone. I have sometimes traced it, I believe, to the pressure caused by a plug used for restraining hemorrhage; and it is more liable to occur during the median, than during the lateral operation. The surgeon who wishes to avoid this fault, should observe caution on three points: namely, to guard the bowel with the left forefinger as much as possible; to direct the staff to be well hooked up against the pubic arch during the deep incision, and to lateralise the edge of the knife well and cut away from the bowel. Against this last rule I am disposed to accuse myself of having offended; and when we remember how the old surgeons speak of directing the first incision towards the left hip, and of their sometimes cutting the trunk of the pubic artery, I am led to think that they kept more clear of the rectum than we do now. The part most in danger is the ampulla, just above the internal sphincter; and, seeing how close is the anatomical relation of the two canals, we ought not to be too quick to attribute blame or express surprise at the occasional occurrence of this accident. I have only one hint to give by way of remedying this mishap: namely, to wait for a long time before resorting to caustics or to division of the sphincter. Nature seldom fails to bring about a cure, or so to contract the wound as to leave but trifling inconvenience. (Mr. William Cadge, British Med. Journal, June 19, p. 1153.)

PEPTONE IN URINE.—*Tests for.*—Peptones are present in the urine with comparative frequency. They are not coagulated by heat or by nitric acid, and they may be detected by precipitating all the albumens by heat and filtering; then peptones may be precipitated in the clear filtrate by picric acid or the brine test. A more reliable and accurate method is that of Hofmeister. The urine is boiled with a few drops of solution of acetate of lead to remove all other albuminous matters; and to the filtrate from these one-fifth of its volume of acetic acid is added, and a small quantity of sodium phospho-tungstate; the peptones are by this precipitated from the solution, and their presence can be further demonstrated by the biuret reaction. The clinical conditions under which peptones are found in the urine are as yet uncertain, and as I have no observations of my own to give, they need not detain us long. It will suffice to say that they may be arranged into three groups. The first group comprises those cases in which peptone in the urine is associated with the breaking down of collections of pus in the body, and this may be styled the pyogenic form. The second group contains a few cases which have been described, in which the peptonuria has apparently resulted from profound blood change, and this may be called the hæmatogenic form. In the third group we have definite lesions of the alimentary tract. Now, it is asserted by some physiologists that the peptone formed in the intestine is transformed into soluble albumen in the intestinal wall, and Maixner believes that by disorder of this function peptonuria may result. He thus would explain the peptonuria which accompanies enteric fever and some cases of carcinoma of the stomach, and suggests that this should be styled the enterogenic form. (Dr. Maguire, Lancet, June 12, p. 1109.)

PROSTATIC RETENTION.—*Classification of Cases for Treatment.*—1. In cases where the prostate has only recently enlarged, and where the partial, but habitual, retention of urine does not amount to more than two or three ounces after every natural act of micturition, with proper care and management, recovery should always take place. These patients become thoroughly accustomed to the catheter, and use that instrument daily, as a mere addition to their ordinary toilet. They live as long as their fellows, and often attain great age. I recently saw, with Dr. Morton, of Kilburn, a gentleman, aged 85, who had passed all his urine by catheter for twenty-five years. 2. Cases where the patient is able to void urine, but is obliged to do so with much frequency, and there is a large area of hypogastric dulness on percussion, often do not come under the surgeon's notice until there is complete retention; they are always grave, and sometimes almost hopeless from the commencement of treatment. 3. There is a form of complete retention which may be

termed the paroxysmal complete prostatic retention, in which the patient only occasionally requires catheterism, often going for long periods without the slightest need of the catheter. (Mr. Geo. Buckston Browne, p. 301.)

Scarlatinal Nephritis.—*The Use of Diuretics in.*—In giving remedies directly to modify the action of the kidneys, none calculated to increase their hyperæmia should be employed. On this account, the stimulating diuretics should be avoided. Exception can hardly be made in favour of juniper, which enjoys, with some writers, considerable reputation in scarlatinal nephritis; but digitalis, the pharmacological position of which is not as yet definitely determined, has received very general approval as a most useful diuretic in acute nephritis. The infusion is by all odds the best preparation of digitalis when its diuretic properties are desired, and may be given in doses of from one fluid-drachm to a half fluid-ounce, according to age, three or four times daily. Its effects are, however, hardly as happy as when dropsy is associated with or dependent upon cardiac weakness. Those diuretics that act specifically upon the secreting cells of the urinary tubules, the sedative or refrigerant diuretics, are, as a rule, to be preferred in the treatment of scarlatinal dropsy, and will often effect the most astonishing results. Of these the salts of potash are most efficacious, the citrate, acetate, bitartrate, and bicarbonate. In cases of slight nephritis and anasarca, a lemonade made with bitartrate of potash will be taken with avidity, and will often almost magically increase the quantity of urine, reduce the dropsy, rapidly diminish the albuminuria, and cause a radical change for the better. This lemonade may be made by adding one drachm of cream of tartar to a pint of boiling water, into which a lemon, cut into thin slices, has been dropped. This quantity, properly sweetened, may be drunk during the day by a child five years old. Water may be allowed freely, and any of the mild domestic infusions may be substituted for it, their virtue residing principally in the amount of fluid. Dickinson especially commends the free use of water as unirritating and tending to wash out of the tubules the exudated matters that choke up their lumina. (Dr. I. E. Atkinson, p. 240.)

Stone in the Bladder.—*Choice of Operation.*—1. In children, litholapaxy should be more adopted than has hitherto been the custom. 2. In male children, when the stone is at all large, the suprapubic will probably prove to be easier to do, and safer than the perineal operation. 3. In female children, litholapaxy should be the rule for small stones, and the high operation for all large ones. 4. In adult females, litholapaxy, or dilatation and extraction, should be adopted for stones of moderate size; vaginal lithotomy for those somewhat larger; and the high operation for

those decidedly of large size. 5. In adult males, litholapaxy should be the rule for stones up to an ounce or an ounce and a half; above that size, lateral, or possibly suprapubic lithotomy—certainly the latter for all stones over three ounces. 6. In the aged, the same rules apply when the urinary organs are healthy; but when the prostate is large and the bladder atonic, suprapubic lithotomy should be more adopted, until its success or failure is demonstrated. (Mr. W. Cadge, Brit. Med. Journal, July 3, p. 6.)

Supra-Pubic Lithotomy.—My personal experience of supra-pubic lithotomy has been so limited that I should not venture to speak of it did I not feel that, though small, it related to the consideration of the whole subject of removing those stones from the bladder which lithotrity could not be made to include. On the other hand, my experience of lateral lithotomy has not only been considerable, but has given results which make me view with some apprehension the proposal to revive, with what seems to me but little discrimination, the supra-pubic operation. Whilst admitting all the advantages claimed for Petersen's method, I would still limit its performance to those cases beyond the reach of lithotrity, where the relations of the stone to the pubic arch were such as to render extraction by this way without damage to the adjacent parts obviously hazardous, and in the female to those cases where Bigelow's proceeding was inapplicable. I do not think it possible to define closer than this. My reasons for urging that the supra-pubic operation should be reserved for those stones which in our individual judgment appear to be beyond removal, with safety to the surrounding parts, by the perineal method, partly arise from a consideration of some of the conditions under which Petersen's operation may be performed, and the experience we possess already relative to the performance of lateral lithotomy as at present practised. Of all the contingencies an operator has to calculate upon and provide against, the most embarrassing is the consciousness that he may find such an anatomical disposition of the parts as to render the completion of the contemplated proceeding impossible. The reflexion of the peritoneum has been found so low down as to render it impossible to open the bladder without entering the peritoneal cavity. I cannot recall any contingency of this nature which might not be provided against beforehand that has ever led to the lateral operation having to be abandoned. Again, I do not think that Petersen's operation is entirely without special dangers other than those connected with an abnormal reflexion of the peritoneum. Our experience of Petersen's method has so far been comparatively limited. Let me illustrate my point in another way. A patient with a stricture and a distended bladder was placed on the operating table of Bellevue Hospital for the purpose of having his stricture relieved. Whilst

struggling under ether the abdominal tumour suddenly disappeared, and the former area of dulness became tympanitic. At a post-mortem examination the bladder was found ruptured, without ulceration or other alteration. No doubt the distension in this case was considerable, as two quarts and a half of bloody fluid were found in the abdomen. When, however, we consider the condition of distension, so far as both the bladder and rectum are concerned, in Petersen's proceeding, I cannot think, from the descriptions I have read, that we are entirely free from the possibility of such an accident occurring in the case of an atonic or weakened bladder which might have not been realised beforehand. (Mr. Reginald Harrison, Lancet, April 10, p. 713.)

Vulvar Pruritus in Diabetics.—As a palliative local application in this annoying complication, Blanchet, of Vichy, recommends the use of the following salve: Oxide of zinc, glycerole of starch, āā 25 parts; salicylic acid, 1 part. Prolonged local tepid baths are also of service in acute cases; the prime indication of rational treatment, however, being the diminution of the polyuria. (Medical News, March 27, p. 347.)

AMPUTATIONS, FRACTURES, DISLOCATIONS, AND DISEASES OF THE BONES, JOINTS, ETC.

Chronic Rheumatic Arthritis of the Hip Joint.—At the Harveian Society on March 4th, Mr. Adams read a paper on this subject. The author described at length the structural changes occurring in the later stages of the affection, and suggested that all the old museum specimens showed that the cases might be arranged in three classes. 1. In one class, the bones were increased in density and weight. The femur showed no depression of the head, nor any absorption or alteration in the angle of the neck. Ring-like masses of bone were thrown out, and the articular cartilages were eroded, but the surface of exposed bone was not absorbed. Eburnation took place in the direction in which motion had been preserved. The outgrowths of bone were produced by ossification in the articular cartilage, as proved by the author in a paper read in 1851 (Path. Society's Trans., vol. iii), by ossification of the synovial fringes, and by outgrowths from the periosteum. 2. In another class, atrophic changes predominated, producing in the hip-joint a smaller head and depressed neck of the femur, the nodular outgrowths being less marked. 3. In a third class, the atrophic and hypertrophic conditions were combined. After expressing his belief in the causative influence of rheumatism and gout, the author proceeded to discuss the relation of these joint affections to locomotor ataxy and other nerve-diseases, and to contrast rheumatic arthritis with Charcot's disease. (See next page.)

Rheumatic Arthritis.	*Charcot's Disease.*
1. Changes chiefly hypertrophic.	1. Changes chiefly atrophic.
2. Commences in the soft tissues.	2. Commences in the bones.
3. Painful throughout its course.	3. Generally painless.
4. Pain confined to the joint.	4. Pains shoot through the limbs.
5. No febrile disturbance. No gastric or ocular symptoms.	5. All these are present.
6. Reflex symptoms present.	6. Reflex symptoms absent.
7. Limited mobility.	7. Flail-like mobility.
8. Progress slow and chronic.	8. Progress rapid and acute.
9. Patients often reach old age.	9. Patients seldom reach old age.

The influence of injury in the production of the disease was discussed; and the paper was concluded with remarks upon treatment, the value of local sweating by means of hot vapour being insisted on, coupled with shampooing and passive movement. The hot sulphur-springs of Luchon, in the Pyrenees, were especially commended. (Mr. William Adams, British Medical Journal, March 13, p. 497.)

Club Foot.—*Importance of Early Treatment.*—There are still some surgeons who hold to the opinion that treatment should not be commenced until the child begins to walk, or even until it is two or three years of age. Again, a respectable number advocate waiting until the child is six or eight months of age. Their argument is that the child will begin to walk soon after this period, and that its own efforts in walking will be of material aid in overcoming the deformity. I confess that I see no weight in this argument. On the contrary, it seems most rational to correct the deformity before the growth of the limb or foot has advanced. The child will then have no bad habits to correct, and the calf will be the better preserved, while a more useful foot can certainly be promised. I am thoroughly convinced that treatment should be begun within the first two or three weeks after birth. The mother or nurse can be taught to appreciate the value of manual force at an age when such force is useful. Early bone changes will thus be prevented. Let the mother or nurse devote as much time as possible to the correction of the deformity by means of the hand. I have seen some excellent results brought about in this simple manner. In order to secure the mother's co-operation, she should be fully instructed, and, if the child wear braces, her attention should be frequently directed to the principle on which the brace is constructed, and she will then the more readily detect any fault in the apparatus employed. (Dr. V. P. Gibney, New York Med. Journal, April 17, p. 428.)

Congenital Club-Foot.—Rules for the Division of Ligaments. The ligament which will most frequently need division is, fortunately, quite subcutaneous, can be easily reached, and divided without

any risk to other structures. The "astragalo-scaphoid" capsule extends from the tip and sides of the internal malleolus across the astragalo-scaphoid articulation, on to the internal cuneiform bone, and loses itself in a fibrous expansion, blending with other ligaments on the fore part of the inner border of the foot. The extent and direction of the fibres which chiefly oppose rectification of the foot can be felt with the finger-tip, when traction is made on the inverted foot. A curved tenotome should be entered immediately in front of the anterior border of the internal malleolus, the blade as far as possible being kept between the ligaments to be divided and the superjacent skin. In the next stage of the operation, the blade is to be turned against the surface of the ligament, and, by means of a gentle sawing motion, is made to divide it. As the superficial fibres are divided, deeper ones come into play, and must in their turn be divided until bone is reached. By keeping the knife close to the bones, and directing its point towards the plantar aspect, the calcaneo-scaphoid ligament, which forms an important part of the capsule in these cases, can be easily divided. In this operation, the tendon of the posterior tibial muscle will almost certainly be divided, and not improbably that also of the anterior tibial muscle. The long and short plantar (calcaneo-cuboid) ligaments can most effectually be reached just where they pass between the two bones. A straight tenotome must be entered as nearly as possible over the calcaneo-cuboid articulation on the outer edge of the foot. If there be much inversion, this point will appear to be on the sole of the foot. The blade must be kept close to the bone, and be made to follow the direction which this articulation takes. In this manner, the two ligaments, mostly blended together at this point, will be divided simultaneously. (Mr. R. W. Parker, Surg. to East London Hospital, Brit. Med. Journal, July 3, p. 11.

Contractions of Palmar Fascia.—(Dupuytren's Contraction.)—*Busch's Operation.*—In contractions of the palmar fascia, Busch's operation in severe cases affords the best result. In simple cases the subcutaneous division of the tense fibres is generally sufficient. It is to be remembered that there are two directions in which the contracted fascial fibres must be divided, parallel to the skin surface and at right angles to the skin surface; by the first, the fibres at right angles to the skin surface, which dip down between the flexor tendons, are divided; by the second, the longitudinal fibres of the contracted palmar fascia are divided. Busch's operation consists in dissecting the contracted fascia from the flexor sheaths by a V-shaped flap, the apex of the flap looking to the wrist; the fingers are then extended, and the flap attached with horse hair stitches to the incision, while the opposing edges of the proximal portion of the raw surface are accurately stitched together. The result is a

Y-shaped cicatrix, and an extended finger or fingers with no tendency to subsequent contraction. (Prof. J. Chiene, Edin. Med. Journal, June, p. 1098.)

Dislocation of Shoulder.—*Reduction by Abduction.*—Responding to Dr. Macleod's appeal in the Journal of January 30, I have to relate the following case. A man, aged 28, muscular, but not in very good health, had a subcoracoid dislocation of the left shoulder. Sixty hours after the accident, I found him, supine, in bed. Abducting the arm to a right angle with the trunk, I pulled from above the wrist with moderate force. Reduction was immediate, and the pain trifling. No anæsthetic was used, and no counter-extension, beyond the weight of the body, was necessary; but I had my left hand on the head of the dislocated bone, to ascertain the progress of the case. A slight snap was heard at the moment of reduction. At the Bradford Medico-Chirurgical Society, where I mentioned the case, Dr. Murray, of Burley-in-Wharfedale, related having reduced a case by a similar method, the patient being in a standing position. I suspect that abduction is often the effective part of the reduction by manipulation. Dr. Macleod has done service in formulating the procedure distinctly; and if his method prove frequently successfult it must be considered a decided improvement, consisting, as i-does, entirely in counteracting muscular resistance, to the exclu. sion of attempts to force the bone directly into its place. (Mr. Philip Miall, British Med. Journal, May 22, p. 974.)

[Dr. Beevor, of the Scots Guards, publishes a similar case in the same journal.]

Flat-Foot.—*Mechanism of.*—The interest in the mechanism of the foot concentrates itself about the head of the astragalus, and the manner in which, in different positions, it is supported by the calcaneo-scaphoid ligament and the tendon of the tibialis posticus. This part bears a large amount of weight in standing, and has the chief weight thrown upon it in the several stages of the step in walking, more particularly when the foot is planted on the ground, and when the heel is being raised from the ground; and the line of weight, especially if the toes be directed outwards, is *in*wards, as well as downwards and forwards. Hence in prolonged walking or standing, when the muscles have become fatigued and the tibialis posticus fails to afford its wonted support and brace, and the strained ligaments yield, the head of the astragalus, and with it of course the entire astragalus, gradually inclines more and more in the direction downwards, inwards, and forwards, the sustentaculum tali and the scaphoid bone are separated and descend, and the tarsal arch is lowered and bowed inwards. Further—and this is a very important change in a mechanical point of view—the trochlear or weight-

receiving surface of the astragalus, instead of being in the plane of action of the calf-muscle and tendon Achillis—viz., in a line between the point of the heel and the interval between the inner two metatarsal bones—comes to occupy a position internal to that plane. The dropping of the arch, being attended with a distancing of the two points of support, will cause slight lengthening of the foot, which will be somewhat lessened by the bowing of the arch inwards. Here let it be remarked that this change is peculiarly likely to occur during the growing period, when the structures are imperfectly shaped and formed, and when, inasmuch as shape is continually altering, they are ill fitted to bear any one position if prolonged, and especially if they are weighted in that position. The free-and-easy movements, the restlessness or fidgetiness, indeed, of the young is a provision against this scource of deformity in the several parts of the body. Unfortunately, owing to the long-continued sitting posture enforced by the usages of civilisation, this provision is too often lost to the spine of the school-girl; and in the enforced standing of young persons in service or shops it is too often lost to the foot of growing boys and girls, to say nothing of the additional trials by weight-carrying and fatigue to which this ill-used part is subjected in errand-boys and many others. No wonder that not simply do the ligaments yield, but that the bones of the foot become deformed, as we find to be the case in the spine in lateral curvature and in the femur, if not in the tibia, in knock-knee. (Professor Humphry, Lancet, March 20, p. 530. See also page 254 of this volume.)

Flat-foot.—Treatment.—It is a constant practice with surgeons in cases of flat-foot, when not too far gone—when the patient is capable of walking, although with discomfort,—to order a pad of leather or other material to be placed on the inner side of the boot to support the arch. Does this support the arch? And how can it? In flat-foot the arch is destroyed. It may compress the internal plantar nerve between the pad and head of the astragalus, and so become intolerable; but if it does not do so, it is a source of considerable comfort to the patient. Why a pad in the boot on its inner side is a source of comfort to the patient is that it belts up the anterior extremity of the os calcis, and maintains it in its nearly normal position, counteracting the effect to some extent of the displacement, directing the weight of the body to the inner tuberosity of the os calcis, and removing the strain from the plantar structures. The treatment of these cases is simple when not too far advanced; good food, fresh air, and as much rest as possible, with a radical change in the construction of the boot. The toe and heel should change places, or, what amounts to the same thing, a good laced boot should be worn, with the sole quite an inch thick in front,

fining off to a line or two at the heel. By these means the normal inclination of the os calcis would be maintained, and the weight of the body properly disposed of. (Mr. M. P. Mayo Collier, p. 260.

Fractured Clavicle.—*Treatment.*—At the Manchester Medical Society, on February 17th, Mr. Richmond demonstrated an easy method of treating this injury. The position adopted was similar to the French one; the palm of the hand of the injured side being laid flat on the chest. The best position for adapting the ends of the fragments was first ascertained by abducting the elbow from or approximating it to the sternum. A piece of broad strapping was passed round both arm and body, to fix it in the required position. A piece of calico, twelve inches broad (more in a big adult), and in length sufficient to go twice round the body, was torn longitudinally, so as to make a four-tailed bandage, leaving about the middle eighteen inches untorn. This centre part was then grooved round the elbow, and the two lengths of the band (A), that lay next the body, were taken one up in front of the chest, over the flat hand, and the other up behind. These were then knotted together behind the sound shoulder, the other ends being meanwhile held out of the way. The other two lengths (B) were taken round the arm and body in front and behind, and also knotted behind and below the sound shoulder. The (A) ends were then brought down, one in front and one behind, and knotted betwixt the fixed elbow and the body, and then cut off short. The (B) ends were then again brought round the body over everything, and finally knotted in the hollow above the fixed elbow. Wadding was then inserted under the knots to prevent them from galling, and the hand against the chest was secured to the length of bandage, passing over it by means of a strip of calico passed round both. The advantages claimed were these:—1. There was no necessity for special apparatus. 2. The arm was fixed in the most favourable position. 3. The fixing was permanent. The method had been used in numerous cases with the best results. (Mr. C. E. Richmond, British Med. Journal, March 13, p. 498.)

Fracture of Patella.—*Treatment by Malgaigne's Instrument.*—The following is the method that I adopt. The limb is secured upon an ordinary straight back-splint, so as to keep the knee fully extended. The splint has a foot-piece, which prevents any shifting, and is secured to the limb by straps and buckles. Neither in this nor in any other fracture do I use plaster for the purpose of securing splints. Straps of fine webbing hold well to the limb, and can be adjusted, tightened, or loosened, as often as required. The lavish use of plaster in some compound fractures of the lower limb has much to answer for. The knee, after

being washed, is well purified by carbolic acid. The position of the patella is carefully marked out in pencil on the skin, and the sites for the points of the hooks indicated. It is important that the hooks should enter the bone at equal distances from the median line. Four punctures are now made with a sharp tenotome at the points at which the hooks are to enter. In each case, the instrument should be passed down to the bone. The two upper punctures will open the synovial cavity, and through them the fluid in the joint is very easily evacuated. The two lower punctures are without the joint. As soon as all fluid has escaped, the hooks are applied. They should be scrupulously clean, and highly polished, and should be kept in carbolic water while the punctures are being made. The two parts of the apparatus must be separated, and each portion applied by itself. It is not until the hooks have acquired a good hold of the bones that the two segments of the instrument should be screwed together. It is better to apply the lower hooks first. When well fixed, they must be kept firmly in position by an assistant. There is often difficulty in inserting the upper hooks. Finally, the two segments are screwed together, so that the fragments of the patella are brought into close contact. There is a disposition for the upper end of the apparatus to "ride" a little. This is corrected by passing a tape over the upper hooks and under the knee, and fixing it by a leaden clamp. This tape can be tightened, if necessary, from time to time. I have always performed this little operation under the carbolic spray. In no case has an anæsthetic been administered, and no patient has complained that the pain of the proceeding was other than could be well borne. After the hooks are secured, the spray is discontinued, and the four punctures are well covered with iodoform. It is advisable to see that the screw of the apparatus is protected from the powder, and kept well oiled, so that the hooks may be readily moved if occasion should arise. The limb is now placed upon an inclined plane, to which the splint is lightly secured. (Mr. Frederick Treves, British Medical Journal, July 24, p. 153.)

Fracture of Lower End of Radius.—*Treatment.*—Commenting upon forty cases of this injury, each case having been under observation from end to end, Dr. R. J. Hall, of New York, says: "The principles of treatment have been the following: Complete reduction of all deformity when patient is first seen. In only one case was it necessary to give ether to accomplish this. Application of antero-posterior splints extending from the elbow to the metacarpo phalangeal articulation. Inspection of the parts at intervals of two or three days during the early part of the treatment, and later at intervals of a week. In two or three cases only the simple antero-posterior splints have not sufficed to

retain the parts in position, when we have applied either Roser's apparatus, a long dorsal splint, with a wedge-shaped pad, keeping the wrist flexed, or strong iron strips, bent so as to give flexion with slight adduction. The splints have been kept in place for from four to five weeks, no passive motion being made. When the splints have been removed, the arm has been examined by all the surgeons present, usually at least three or four, often more, and the result noted as perfect only when all were agreed. The patient has usually been instructed to carry the arm in a sling for a week longer, and not to attempt any laborious work for at least three weeks more. Of these forty-one cases the result as regards absence of any deformity, and either perfectly normal movements of the wrist and fingers, or so little stiffness that the functions were practically normal, has been recorded as perfect in thirty-one." (Dr. R. J. Hall, Medical News, April 10, p. 404.)

Hip-Disease.—*Bone Drainage in.*—If it be conceded that in certain given cases hip disease has its starting point in the femoral portion of the joint, and that an inflammatory condition constitutes this commencement, it can hardly be denied that an opening made into the diseased structures without involving the cavity of the joint is a rational and logical treatment. It only requires that it shall be possible to recognise commencing femoral coxalgia, and that the surgeon shall find it possible to select cases where the disease is mainly confined to the femur, and is in such a modified condition as to afford hope of a good result from the treatment. The cases, of course, affording the best chances of good result are those which are neither strumous nor tubercular; but all we have learned in late years of these cachectic states points to the propriety of removal of the diseased tissue and free drainage in them, no less than in the simple condition. That osteal cases can be distinguished from arthritic, and femoral from acetabular, is sufficiently evidenced by the examination of any good text-book, and, as for the condition of disease in the particular part, the selection of cases fit for operation is a matter of clinical experience more than of written rule. I am strongly of opinion that even where the disease has engaged the soft structures to a limited extent, the operation of tunnelling the bone may effect a cure, as the relief of the bone itself by the exit given to inflammatory matters removes a cause of irritation from the synovial membrane, and must have a beneficial effect. I think, therefore, that while the typical cases for this treatment are those in which the disease has only shown itself in the femur, it is also applicable to instances in which synovitis exists. Further, the plan of tunnelling may be used in the late stage of the disease, as advised by Mr. Greig Smith, as a means of draining the joint of pus or particles of necrosed bone. (Mr. Thornley Stoker, p. 250.)

Hip-Disease.—Rectal Examination.—Dr. Schmitz, of St. Petersburg, points out that by examination through the rectum the pelvic aspect of the acetabulum may be fully explored. It is well known that coxitis often commences in the acetabulum, and probably not unfrequently in the Y-shaped cartilage in its floor. The diagnosis of the seat of the trouble may therefore be aided by the measure proposed. He gives the following cases: Male, aged three, symptoms of hip disease; gluteal abscess; prominence of third lumbar spine; rectal examination revealed a swelling in region of acetabulum; gluteal abscess opened; it led into hip-joint; acetabulum perforated. It is probable here that the trouble commenced in caries of the lumbar spine, and that the abscess resulting therefrom found its way into the hip-joint. Male, aged five, Pott's disease of spine; hip disease; gluteal abscess; precisely the same perforation of the acetabulum with tumor felt *via* rectum as in previous case. This also was probably a case of spinal abscess burrowing into the hip-joint. Male, aged five, hip disease twenty-one months; gluteal abscess, the size of a hen's egg, felt through the rectum; pain on defecation; perforation of the acetabulum discovered as in the other cases. Arthrectomy was performed in each instance, and a good recovery resulted. (International Journal of the Medical Sciences, July, p. 228.)

Necrosis of Jaw following Medicinal use of Phosphorus.—At the Clinical Society, on March 12th, Mr. Hutchinson read brief notes of a case. The patient was a lady, aged 65, who was seen by him in November last, when the whole lower half of the face was enlarged, and several sinuses opened externally. Bare discoloured bone was exposed in the mouth along the whole length of the alveolus. There was also a large deposit of new shell. The discharge was profuse and fœtid in the extreme. As to the origin of the necrosis, which resembled that due to phosphorus, it was elicited from the patient that she had "been taking phosphorus for the last two years," and had "quite renovated her brain thereby;" the truth being that, save for a few intervals, she had during the time named been taking three Kirby's pills daily, each containing one-thirty-third of a grain of phosphorus. The condition of the patient being much reduced, operation was deferred, pending improvement in her general health, until the present month, when, after consultation with Sir James Paget, Mr. Hutchinson removed about four inches of dead bone, without having to resort to cutting instruments, although he feared at first that this would be necessary. The patient made an excellent recovery. Mr. Hutchinson remarked that Kirby's phosphorus pills were in very extensive use, but that this was the first case that he had seen in which jaw-disease could be traced to the medical use of phosphorus. The patient had carious

teeth, and inflammation of the jaw had begun in connection with one of them, and probably about six or nine months after the taking of the pills commenced. (British Medical Journal, March 20, p. 545.)

Osteotomy for Ricketty Deformities.—*Results of.*—Since the day I performed the first Ogston's operation, no fewer than sixty-nine such operations have been undertaken in this Infirmary; and, though Macewen's operation is the newer proceeding, I learn from the records of the institution that it, too, has been performed two hundred and eleven times; and so successful have both operations been, that out of all this great number, only two have died—one from pyæmia, due to the operation, and one of scarlet fever, contracted after the operation, and during the process of healing. And of other sections of bones for the cure of deformities I could give you a long list (236, which have been done in the same time). Of the satisfaction they have afforded me, I can give you no comprehensible idea; but I can congratulate you, and I do very heartily, that a means of safely effecting untold good, and of mitigating indescribable misery, has, by the experience of the past few years, been placed at your disposal. (Mr. C. G. Wheelhouse, p. 264.)

Reinjection of Blood in Major Amputations.—Take a case of amputation, primary or other. While the limb is being amputated and the arteries tied, the blood is caught in a dish containing a 5 per cent. solution of phosphate of soda in distilled water. The solution is further added, as may be required, to keep the proportion of 1 to 3 of blood, which may, of course, be easily done by having the dish graduated. Care should be taken that any error of quantity shall be on the side of the soda solution. A small piece of glass tube, conveniently made pen-shaped, is tied into a vein on the face of the stump. To this the syringe is attached, and the fluid is very slowly injected. It is not difficult for one person to manage the whole process, but it is convenient that an assistant shall catch the blood and mix with it the soda, another fill and refill the syringe, and a third inject the blood and pinch the india-rubber tubing while the syringe is being refilled. The injection thus goes on while the operator is tying the vessels, and in that way the patient is not kept longer on the table than he otherwise would be. One or two points of detail, of course, require attention. The syringe should be held above the horizontal, that air may not be injected. It is plainly for the good of the patient that the solution be thrown in as nearly at blood heat as possible. The most rigid antiseptic precautions must be taken with fingers, instruments, and dishes, but no spray or antiseptic solution can be applied to the wound while the blood is being caught. In this view it is obvious that in

operating through septic tissues the utmost caution must be exercised, and I myself rather amputate an inch or two higher than run this risk. (Dr. John Duncan, Edinburgh Med. Journal, p. 910. See also *Retrospect*, vol. xciii, p. 221.)

Separation of the Epyphysis of the Caput Femoris.—Mr. Noble Smith publishes a case in which he diagnosed this lesion. Mr. Smith saw the case sixteen weeks after the receipt of the first of two injuries (falls), both crippling the right leg of the patient, a delicate young lady aged 17 years. There was nothing peculiar in the nature of either injury, the first was supposed to have caused "a sprain of the muscles surrounding the hip-joint, leaving them somewhat weak and favouring injury to the joint." The second accident was regarded as the cause of the lesion under discussion. Eleven weeks afterwards the right leg was quite useless; it was an inch and a quarter shorter than its fellow; the right trochanter was slightly prominent; the foot was rotated outwards; in the recumbent posture the limb could be raised by the patient to an angle of 45° with the body; on passive rotation inwards the toes could be passed an inch towards the vertical, but no further rotation could be made without moving the pelvis; there was complete absence of pain in the hip when these movements were made. Under chloroform, with very moderate force, the limb was placed in a natural position, except a very slight degree of shortening; during the necessary manipulations a cartilaginous grating was felt. (Mr. Noble Smith, Lancet, March 20, p. 538.)

Sprained Joints.—At the Harveian Society on March 18th, Mr. Owen read a paper on Sprained Joints, in which he urged that a sprained joint should be dealt with on the same principles as those which guide the surgeon in his dealings with a fracture at or near the articulation. He advocated rest and compression for the joint, and maintained that if only the parts be at once enclosed within a plaster-of-Paris casing, with even compression, effusion will be prevented and pain allayed. He employed Croft's method of applying the gypsum splints, and urged its adoption in preference to lotions, ice-bags, simple bandaging, and strapping. He instanced various illustrative cases. (Mr. Edmund Owen, Lancet, April 3, p. 642.)

Sterno-Clavicular Dislocations.—*Treatment.*—M. Le Fort, in relating two cases of dislocation forward of the sternal end of the clavicle, points out that in this luxation the end of the bone can be replaced very readily by direct pressure, but that it is only with considerable difficulty that it can be retained in position. With reference to this point, it may be said that M. Le Fort appears to exaggerate the evils that attend non-reduction. It is well known that the function of the upper limb may

be perfectly recovered after an unreduced dislocation of the clavicle forward. M. Le Fort, after pointing out the defects in the methods usually adopted in France for the treatment of this injury, advocates the following apparatus: The clavicle having been replaced, a large sheet of gutta-percha is taken, and, while warm, is carefully moulded over the two sterno-clavicular joints, over the inner two-thirds of the clavicle on the injured side, over the lower half of the neck and the upper half of the thorax. This splint is then fixed in position by a starch bandage, and the apparatus is not removed until the end of five weeks. In the two cases cited the treatment answered admirably, and the displaced bone was perfectly retained. (Mr. Treves's Report in International Journal, April, p. 607.)

Trigger Finger (Doigt a Ressort).—At the New York Neurological Society on June 1st, Dr. Jacoby read a paper on this affection, which, he said, is, strictly speaking, one of a surgical and not of a neurological nature—that is, if its pathology as at present accepted is correct. These cases, however, when encountered by the general practitioner, are liable to be referred to the neurologist; hence the importance of being able to diagnosticate the condition. Doigt à ressort is the name given by Nélaton to a peculiar inhibition of motion in fingers otherwise normal. Flexion and extension are arrested at a given point, and if completed by force, the movement resembles the closure or opening of the blade of a pocket-knife. Sometimes only extension is interfered with. As a rule, muscular effort alone is sufficient to overcome the obstacle. Generally the entire motion is painful, particularly at the time of the snap. The patient usually locates the pain in the interphalangeal joint, but a careful examination will show that it is at the metacarpo-phalangeal articulation. Externally the finger presents nothing abnormal; but pressure over the last-mentioned joint almost always produces pain, the painful point being usually confined to a small place upon the volar surface of the flexor tendon. In all cases except those of Busch and his own, a hard lentil-sized body, which was particularly painful on pressure, was found attached to the tendon about two centimetres above the digito-palmar fold. All authors lay stress upon the presence of this body, as it is, according to all theories of the mechanics of this phenomenon, essential to its production. In Dr. Jacoby's first case he did not remember to have found any nodosity, but as he did not pay particular attention to it, it may have been overlooked. In his second case, however, knowing of the cases of Busch, and of Marcano's criticism on them, he made a very careful examination, and could say positively that there was no nodosity or abnormality of any kind discoverable. (Dr. George W. Jacoby, Medical News, June 19, p. 694.)

AFFECTIONS OF THE SKIN, ETC.

A Sublimate Soap.—Several of our German exchanges contain notices of the successful preparation by Geissler, of Dresden, of a sublimate soap, prepared by admixture with an excess of the fatty acids. It will keep for months, and promises to be of special service in treatment of certain skin affections, but more particularly for purposes of disinfection. Johne, of Dresden, in Fortschritte der Medicin, communicates the results of experiments with it in a composition of 1:100, and he has determined that anthrax filaments containing spores lose their infectious properties in half-a-minute, and that it destroys with equal rapidity the blue-milk bacillus. The resisting power of the spores of anthrax is notorious, and an agent which is sufficiently active to destroy them in such a short space of time may be guaranteed to kill all forms of germs. Johne remarks that in such a soap, surgeons and pathologists possess an extraordinarily portable, convenient, and active antiseptic, which has the great advantage over watery solutions of other disinfectants, that it comes in most intimate contact with the oily skin and acts at the same time as a cleansing and disinfecting agent. (Medical News, March 20, p. 326.)

Boils.— *Treatment.* — Guigeot urges the adoption of a more rational treatment of boils than the old method of poultices, incisions, and bleedings, now that we have a more accurate knowledge of their pathology. The disease is inoculable (Lannelongue) and parasitic, the active agent being apparently the *Tolura pyogenica* (Pasteur and Löwenburg). The treatment must therefore consist of parasiticides as local applications. The acid nitrate of mercury and carbolic acid act well, but Guigeot prefers tincture of iodine, painted freely and repeatedly on and around the affected spots. If applied early it will abort the further development of the sore, and should be used prophylactically to any other synchronous lesions of the skin to prevent them from becoming furuncular. For the face, camphorated alcohol may be substituted for the iodine, to avert discolouration. Internally he finds sulphur most useful, and its administration should be continued for a month at least, or even longer in obstinate cases. (Dr. Brooke, Med. Chronicle, April, p. 76.)

Boils.—Tincture of iodine, already suggested by M. Boinet, is preferable to all other local treatment. With a badger's hair brush, the surface of the affected part is thickly painted, so as to form a layer which overlaps the healthy tissue. Layers should be laid on, one over the other, until a deep brown stain is produced. The neglect of this process might endanger the success of the treatment. A single painting often succeeds in stopping a slight or little-advanced attack. It is, however,

better to repeat the treatment several times a day, and for several successive days. Even when pus has already formed, success must not be despaired of. For in case of failure, the failure is scarcely ever complete, as the tendency to spread and the intensity of the pathological process are usually considerably lessened. (M. Guigeot, Medical Record, April 15, p. 163.)

Carbuncle.—*Treatment.*—Dr. James Collins says, in the Philadelphia Med. News, I have lately treated two cases of carbuncle on the back of the neck by a method which seems to have some advantages. The patient is put under the influence of an anæsthetic, and a linear incision made. I then take a scoop and remove all the necrosed tissue, and wash the parts thoroughly with an antiseptic solution of mercuric chloride. I then put in a drainage tube, and insert two stitches to bring the central part together. Each day the cavity is thoroughly washed out with the antiseptic solution. The patients have done well, and the cicatrix has been less than after any other method I have tried. The success depends upon the removal of the necrosed tissue and the use of the antiseptic solution. (Canada Medical and Surgical Journal, April, p. 566.)

Fœtid Sweating of the Feet.—*Subnitrate of Bismuth.*—Vieusse recommends the subnitrate of bismuth in the treatment of fœtid perspiration of the feet, and concludes as follows:—1. Profuse prespiration of the feet, whether accompanied by pain or fœtidity, is easily cured by the application with slight friction of subnitrate of bismuth upon the diseased parts. 2. In opposition to the opinion generally held, according to which the suppression of exaggerated perspiration may produce numerous accidents of metastasis, observation shows that the cure of this affection has not been followed by unfavourable results, and that if these are observed they should be attributed to other methods of treatment hitherto employed. 3. In the cure of this disease, subnitrate of bismuth appears to exercise a purely local action, rendering the superficial cuticular structures firmer and more resistant. The remedy, perhaps, exerts an action also uponthe sudoriparous glands and sebaceous follicles, changing the quality and quantity of their products, and possibly, as a result of the changes produced in the part with which it comes in relation, modifies more or less profoundly the capillary circulation. 4. In certain cases the remedy suppresses only temporarily the profuse perspiration of the feet, but causes the fœtid odour, as well as the pain, which is the consequence of the exaggerated secretion, to disappear permanently. (M. Vieusse, Practitioner, May, p. 382.)

Granuloma Fungoides.—At the Pathological Society, on May 4th, Dr. Payne showed drawings and microscopic specimens of Granuloma Fungoides from a man aged 56. The cutaneous

affection consisted of scattered, large, red, scaly patches, which became dark red and then brown, and looked like psoriasis or scaly eczema; but, in addition, there were, sometimes replacing the patches, tumours of hemispherical shape, from half a walnut to an orange in size. The man was born in the country, but had passed thirty years in London at a railway station. The diagnosis presented some difficulty, and leprosy was thought of. It was, however, like that described by Alibert as mycosis fungoides, and by others as lympho-sarcoma and general sarcomatosis. A case was recorded under the name of leprosy in the 20th volume of the Transactions, which Dr. Payne regarded as a granuloma fungoides. The internal organs were healthy. The tumours only invaded the skin, and consisted of an infiltration of small round cells, which had essentially the same structure as that of the scaly patches; there was also some evidence of a new formation of connective tissue without giant cells; the structure was not specially lympathic, and the cells differed from those of sarcomata. Micrococci had been described by Auspitz, of Vienna, as a copious infiltration of the cells; but the evidence of their nature was not conclusive. Rindfleisch had discovered an undoubted streptococcus, but only within the vessels; these were certainly not present in Dr. Payne's specimens. The foreign observations being *post-mortem* specimens, the presence of micrococci could be easily accounted for. (Dr. J. E. Payne, Lancet, May 8, p. 876.)

Hydroa (Herpetiforme).—*Its Nature and Treatment.*—Dr. Crocker, Physician to Skin Dept., University College Hospital, in an exhaustive paper, containing seven interesting examples of Hydroa herpetiforme, says: "The preceding considerations appear to me to admit the following conclusions. 1. There is a group of diseases distinct from pemphigus, herpes, and erythema exudativum, whilst sharing some features with all of them, for which the term 'Hydroa herpetiforme' is convenient, and has the advantage of being already partially adopted. 2. It would give greater clearness to the term hydroa, if it were restricted to diseases of the type discussed, and not made to include diverse anomalous bullous eruptions. 3. The features which characterise the group are the presence, at some period of their course, of erythema, chiefly but not exclusively of a circinate type, of vesicles, bullæ, or pustules with a tendency to group herpetiformly. These different elements are present in varying ratio to each other, now one, now another, predominating and overshadowing the other; but the disease is always accompanied by intense pruritus, and the eruption tends to undergo evolution and involution at the periphery and centre respectively. The disease generally runs a long but ultimately favourable course, with frequent exacerbations and remissions, with a strong tendency to

recur even after long intervals, but it is generally amenable to careful persevering treatment. The treatment may be deduced from the foregoing cases. Improvement, as far as practicable, in the general surroundings is often necessary; a well-selected and nutritious dietary, but usually with abstention from alcohol, and mental and bodily rest, are usually indicated. Internally, I have found arsenic the most reliable remedy, but it must be given in full doses, and often requires to be pushed to its physiological limit; improvement seldom sets in until six-minim or eight-minim doses of the liquor arsenicalis are reached, but the dose should be small at first, and gradually increased. Where that has failed—and, like all such remedies, it fails sometimes—I have usually succeeded with tincture of belladonna, also given in unconventional doses, up to thirty minims or more. Dr. Tilbury Fox advocated quinine in two-grain to five-grain doses; and, no doubt, it is useful in some cases—for example, in one case in which atropine failed; while cod-liver oil for the broken-down is strongly indicated. Locally, the object is to relieve the pruritus; for this, the best agent, in my hands, has been a lotion of two drachms of liquor carbonic detergens to eight ounces of water, applied freely whenever the pruritus is troublesome; this has always given temporary relief, and the prevention of scratching is very important. Other antipruritics may be used, such as sanitas diluted with equal parts of water, &c. (Dr. Radcliffe Crocker, British Medical Journal, May 22, p. 969.)

Icthyol.—*Its Use as an External Application and as a Medicine.*—This drug, which was discovered by Schröter, and introduced as a dermatological preparation by Unna (1882), has since been most favourably reported upon by various writers in Germany. The crude substance is distilled from a bituminous shale, found in the Tyrol, and full of the semi-fossilised remains of various fishes. It is a transparent oil, of yellow-brown colour, and sea-green fluorescence; sp. gr. 0·865. Its constitution is complicated: the elementary analysis (Baumann and Schotten) giving as its components, carbon 77·25, hydrogen 10·52, sulphur 10·72, nitrogen 1·10. When treated with concentrated sulphuric acid an icthyol-sulpho-acid is produced, soluble in water. This acid and its sodium, potassium and ammonium salts, which are also soluble in water, are those employed. The analysis of the sodium salt gives C 55·05, H 6·06, S 15·27, Na 7·78, O 15·83, or, proportionately, $C_{28}H_{36}S_3Na_2O_3$. The ammonium icthyol sulphonate is thinner than the other two, and only contains three-quarters of their quantity of the acid. Like the acid, all three are treacle-like fluids, completely soluble in water. Unna gives a very glowing account of its virtues, both as an external application, and as a medicine. Externally, it is useful as a lotion, or soap, or ointment, or even in its pure state, in cases

which require an agent to act against inflammatory symptoms and constringe the tissues (acne, rosacea, eczema, &c.). Friction with a ten per cent. icthyol salve is certainly useful in rheumatism. The administration of icthyol affects not only the anomalies of circulation in the nose, but exerts, at the same time, a favourable influence on the circulatory disturbances of other organs, which are so often combined with it, such as hyperæmia and swelling of the mucous membrane of the nose and pharynx, hyperæmia and chronic inflammation of the conjunctiva, stagnation of blood and chilblain-like erythemata on the hands and feet, feeling of cold in the extremities, hemorrhoids, anomalies of menstruation, back pain from engorgements of the pelvic viscera, &c. The activity of digestion always increases during the internal use of the drug, the stools are regulated, but not increased, the appetite generally increased: old gastro-intestinal catarrhs are cured, the affected patients gain once more their old freshness and elasticity. Menstruation forms no contra-indication to its use. (Unna, Aerzt. Vereinsblatt. für Deutschland.) One great drawback is its strong and nauseous taste. Unna finds that his patients all get accustomed to this after a few days, when the dose is freely diluted with water and bolted at one drink, but I have certainly been unable to cover the taste with any perfume, and agree with Lorenz, that pills or capsules present the only possible form of administration. I find it best to make a mass of pills or capsules by rubbing up the drug with gum tragacanth. The dose is from 10 to 40 drops, but more may be taken, as Baumann and Schotten have shown that 10 or 12 grammes may be given to dogs without the slightest ill effects. Should the sulpho-icthyol salts bear out on investigation the encomiums which have been passed on them by various writers, we will certainly have added a most useful member to our list of therapeutic agents. (Dr. H. G. Brooke's Report in Medical Chronicle, Jan., p. 335.)

Impetigo Contagiosa.—The number of cases of this affection shows no signs of diminution, and we continue to find evidence of its epidemic prevalence in particular streets, schools, &c. This year the statistics show a rather unusual number of adults, including cases up to forty-four years of age; in which, however, there was a clear history of contagion. The original sources of suppuration showed great diversity in different cases. In more than one case this year the infection was traced to a superficial whitlow; and it is worth noting that MM. Cornil and Babes in their recent work ('Les Bactéries,' Paris, 1885, Atlas, pl. i) have figured from *Tourniole* or Whitlow, a *Streptococcus* or chain of micrococci, such as I have several times seen in early vesico-pustules of impetigo contagiosa. But we are not authorized in concluding from this mere similarity of form, either that the

micro-organism is the same in the two cases, or that there is any proof of its being in either case the specific cause of the lesions in which it is found. It is only too easy for micro-organisms to penetrate into superficial inflamed parts, even, as I believe, when the epidermis is apparently unbroken. At the same time it is almost impossible to doubt that the affection now spoken of is produced by a specific cause, *i.e.*, a micro-organism, difficult though it may be to discriminate the species from others accidentally present. (Dr. J. F. Payne, St. Thomas's Hospital Reports, vol. xiv, p. 221.)

INCIPIENT BALDNESS.—In commencing alopecia, Vigier advises the use of the following formula, in which the proportions are given by weight: Alcohol (80°) ℥xx; camphorated alcohol, rum, tincture of contharides, glycerine, āā ℈iv; essence of santal, wintergreen, laurel roses, āā gtt. v; muriate of pilocarpine, gr. viij. The mixture is gently rubbed on the scalp once daily. (M. Vigier, Revue de Thérapeutique, May 15.)

LUPUS.—*Corrosive Sublimate in.*—The method first adopted was that recommended by Doutrelepont, viz., keeping the surface covered with a watery solution of corrosive sublimate applied on lint, and covered up with oil silk or gutta-percha. This method, however, is, for obvious reasons, not easily applicable to out-patients. I then tried a sublimate solution mixed with glycerine to prevent evaporation, to be applied several times a day, so as to keep the skin moist with it. This did good, but I could never be sure that it was kept constantly applied. Accordingly, recourse was had to another method of bringing the remedy in contact with the skin, viz., by dissolving it in collodion. This was found to produce in a satisfactory manner the results reported from the remedy. The strength of solution employed was in the first instance that recommended by Doutrelepont; viz., $\frac{1}{10}$ per cent. or half a grain to the ounce. Afterwards the strength was gradually increased up to four grains to the ounce, hyd. perchlor. gr. iv, collodion ℥ j. (Dr. J. F. Payne, St. Thomas's Hospital, p. 324.)

PSORIASIS.—*Chrysarobin Paint for.*—Speaking of a very bad case of universal psoriasis, Dr. Payne says: "The application which did him most good was that of 'chrysophanic acid,' or more correctly chrysarobin; this being dissolved in a film of gutta-percha and chloroform, or 'traumaticin'; a method first introduced, I believe, by Professor Auspitz. The Liquor Gutta Percha of the British Pharmacopœia is a very good 'traumaticin,' and chrysarobin may be dissolved according to the following formula: ℞. Chrysarobin, gr. xx; liquor gutta percha, ℥j. The solution may be also used stronger (gr. xl ad ℥j) or in some cases weaker (gr. x). It should be painted with a brush

on the affected places (from which the scales have been previously removed as much as possible by soft soap, &c.) once or even twice a day, so as to form a permanent film. The advantages over any form of ointment are that the action is more rapid, and there is no staining of the clothes. I have also used Besnier's modification of the process, which consists in first painting on a chloroform solution of chrysarobin, and covering this with a gutta-percha film. I have also in some cases applied a film of simple gutta percha over the gutta percha and chrysarobin. These methods add to the trouble, but cause the application to adhere more firmly. It is evident that this process can have only a restricted application in the case of out-patients, but in private practice I find it of the greatest possible value, and believe that chrysarobin thus applied is by far the best of all local applications for psoriasis, and for the present supersedes all others." (Dr. J. F. Payne, St. Thomas's Hospital Reports, vol. xiv, p. 223.)

Red Hands and Feeble Circulation: Susceptibility of Skin of Head and Face: Urticaria from Exposure to Cold Air.—*(A Minimised Form of Kaposi's Disease).*—I could not mention a better example of the peculiar condition of feeble circulation which leads to red hands and flushed cheeks, than that of Miss B. This young lady was, when I saw her, 20 years of age, of fair complexion, and delicate skin. Under ordinary conditions, her hands were of an uniform deep red colour, and cold. Her cheeks and ears were also of the deepest possible tint. Susceptibility of her face and neck to the influence of cold was the most marked peculiarity of her case. She could not wash with cold water, or expose herself in the least to wind, without making the skin tingle and become covered with urticarious wheals. When so affected, the skin would burn and feel most uncomfortably tight. She had never known her urticaria to be produced by articles of diet, but she had found, during the last year or two, that she could not eat shell-fish or shrimps, on account of the indigestion which they produced. Her first nettle-rash had occurred after a cold bath in the sea, and for long she had been obliged to use hot water for washing, on account of the tingling and burning produced by cold. Miss B. had suffered, in earlier life, from chilblains, and so had one of her sisters, but not to any unusual extent. The flushing of her cheeks, when exposed to cold, was so great, that it might almost count as a kind of chilblain. It was, indeed, attended in parts by slight swelling and œdema. There had never been any definite chilblain on the ears or nose. I have ventured, in the heading of this case, to use the expression, "a minimised form of Kaposi's disease." Now, Kaposi's disease presents certain features of very marked difference from those shown by Miss B.

In it, several brothers and sisters are similarly affected, and they are liable, in childhood, to have the skin of the face, hands, arms, and legs inflame, ulcerate, become pigmented, and finally to fungate, and even become the seat of cancerous sores. The essence of the disease is, however, congenital susceptibility of the exposed parts to irritation from external influences. The skin of the face and hands, &c., does not wear well, but inflames on exposure. The same general statement is true of Miss B.'s case, and of many others. In some, the susceptibility results simply in congestions; in others, of changes in nutrition. Thus we may have red hands and cheeks, chilblains, eczema, urticaria, recurring erysipelas with œdema, lupus, or finally Kaposi's disease. In all, the original liability is congenital and inherited. Kaposi's disease is probably the result of the most intense form of inheritance. (Mr. Jonathan Hutchinson, British Med. Journal, May 29, p. 1018.)

Saponimenta in Skin Affection.—Saponimenta have lately been brought forward as superior in their action to medicinal soaps. They are formed by mixing the desired medicaments (sulphur, tar, balsam of Peru, carbolic acid, naphthol, icthyol, iodoform, &c.) with a neutral oleine or stearine soap which has been cleared by dialysis and dissolved in spirit of wine. Letzel has investigated their properties extensively, and finds that they are of great service in the parasitic diseases of the skin, in chronic, scaly, and pruriginous dermatoses (psoriasis, lichen ruber, infiltrated eczema, prurigo), in acne, icthyosis, and especially in the dermatoses of the hairy regions. In acute cases, on the contrary, they are not advisable. (Dr. H. G. Brooke, Medical Chronicle, April, p. 76.

Small Nævi.—*An Application for.*—Börngen treats telangiectatic nodules in the following manner: The spot and an area of skin extending 2 mm. beyond it are covered, for four days in succession, with layers of collodion containing four per cent. of corrosive sublimate. A scale about a millimetre in thickness forms, and the cure is rapid and absolutely painless. (New York Med. Journal, July 24, p. 112.)

Urticaria and Pruritus.—*Menthol.*—Among the myriad of remedies for these troublesome affections, we have no other which affords such complete and instantaneous relief as a solution of menthol. Not only is the itching relieved for a time, but a cure seems to be effected. In pruritus and in eczema, moistening the parts with menthol solution causes an immediate cessation of the pain. The solution should contain from two to ten grains of menthol to the ounce of water (American Journal of Pharmacy). (Edinburgh Med. Journal, Sept., p. 274.)

SYPHILITIC AFFECTIONS.

INDOLENT SWELLING OF LYMPATHIC GLANDS IN SYPHILIS.—The following is taken from Dr. Brooke's review of a paper by Dr. Ernest Finger, the well-known Viennese docent for syphilis, on the diagnosis of the two species of chancre from a dualist point of view. The point chiefly discussed is the value of induration in the differential diagnosis of venereal sores. "Induration proving thus to be a broken reed, it becomes necessary to look for some reliable symptom which is always present, and this is to be found in the multiple *indolent swelling of the lymphatic glands.* So much worth have Ricord, Sigmund, and Fournier set on this symptom, that they consider it as absolutely essential to the proof of the syphilitic nature of a chancre. It affects the lymph glands of the groin, when the chancre is on the genitals, six to eight days after the appearance of the sore, and therefore three to four weeks after infection; and by the end of the sixth or seventh week, *i.e.*, within the second incubation period, and before there is the slightest trace of any affection on the skin or mucous membrane, the swelling has spread to the cervical, cubital, and other remote and deeper glands. The process of general swelling and induration of the glands is, as Vajda's and Obraszow's anatomical researches have shown, strictly analogous with the hardening of the original lesion, and must, therefore, be looked upon as a distinct syphilitic metastasis, from which the syphilitic nature of the original lesion may be inferred. It is true that scleradenitis may occur in other conditions (prurigo, neglected urethritis, in cachetic individuals, soft chancre), but exceedingly seldom, and it is very rarely absent in true syphilis; it is, in fact, an almost constant and almost pathognomonic symptom of the syphilitic primary lesion. With every indurated sore, therefore, the rule should be, to defer making a diagnosis until the end of the fourth week; if by that time we find that an indolent indurated polyadenitis has developed, we can conclude with almost absolute certainty that the sore is truly syphilitic. It must, however, be carefully noted that the induration is fresh, and the glands globular and elastic; for tough, doughy, ill-defined glands, surrounded by indurated connective tissue, would point to some previous older affection, and not to a fresh infection. Should no adenitis, however, occur by the end of the fourth week, we cannot draw a negative conclusion, we are simply uncertain; but the longer the time which elapses after then without any appearance of glandular swelling, the less is the probability that the lesion is the primary lesion of syphilis." (Dr. H. G. Brooke, Medical Chronicle, May, p. 168.)

OBLITERATIVE BRONCHITIS AND TRACHEITIS IN CONGENITAL SYPHILIS.—At the Pathological Society, May 4, Mr. Parker

showed specimens of a case of obliterative endo-tracheitis and bronchitis. They were removed from the body of a boy aged fifteen years, the subject of congenital syphilis. He had first come under observation on account of endosteal nodes on both tibiæ, and of a tracheal fistula dating back three or your years, when he was tracheotomised for syphilitic laryngitis by Mr. Elkington, of Birmingham. He continued to wear a tube for many months; on its withdrawal the opening had remained patent. It was thought not improbable that the irritation of fine foreign matter (dust, &c.) entering the lungs through this fistula had first started the condition about to be described. Commencing about an inch above the bifurcation, the lumen of the trachea suddenly began to narrow in a more or less uniform manner; a little lower down this narrowing became less uniform but more marked, so that the lumen was reduced to about one-third of its normal size. The left bronchus was almost entirely occluded. The occluding new growth consisted of well-formed fibrous tissue surrounding and separating the mucous glands, which appeared quite healthy. The changes in the trachea were strictly endo-tracheal; those in the bronchi were partly endo-bronchial and partly peri-bronchial, the latter, it was thought, being secondary to interstitial pneumonia set up by the retained secretions. Both lungs were in an advanced state of bronchiectasis. The extent of the occlusion of the lowest part of the trachea and of the primary bronchi was very remarkable, the available area for breathing purposes being little more than that of a large quill. The resemblance of this condition to end-arteritis was remarked upon. In reply to Dr. Bristowe, the author said that, so far as he knew, tracheotomy did not lead to cirrhosis of the lung. (Mr. Robert W. Parker, Lancet, May 8, p. 876.)

AFFECTIONS OF THE EYE AND EAR.

Amaurosis Uræmica.—In this class of cases there are no intra-ocular change except in some rare cases. Œdema of the retina, which passes away in a few days or more, rarely is so marked as to cause separation of the retina from the serous infiltration, as in a case reported by Heyl, where retinal separation in the R. E. and uræmic amaurosis in the L. E. occurred simultaneously. The patient was a woman, aged 45, married, the subject of chronic renal disease, granular casts being present in the urine. The uræmic amaurosis in the L. E. remained for three hours, and then gradually disappeared till vision became again normal. The detachment remained permanent, and may have been produced either by an extravasation of blood, or more probably an exudation of serum, due to the changes in the vascular system

produced by the renal disease. As to the cause of blindness in uræmic amaurosis, Traube's theory seems at the present time to hold good. He considers the cerebral symptoms in uræmia due to acute anæmia of the brain, caused by an œdema of the brain-tissue, due to the circulation of urea in the blood. The blindness in these cases is sudden and complete; it usually is associated with the group of uræmic symptoms, convulsions, &c. The treatment of this, as of the other ocular symptoms occurring in renal diseases, needs no special local measures. The treatment of the general disease is the best that can be done for the eyes. Tincture of chloride of iron is probably the the best remedy for both the local as well as the general disease. (Dr. W. Oliver Moore, New York Med. Journal, April 17, p. 437.)

Cataract Extraction without the use of a Speculum.—The chief desideratum is a well-trained and flexible ring-finger. That this digit is too often feeble and not properly under control, is a fact well recognised by pianists and other instrumental executants, and the special exercises that have been devised for its education might also be practised with advantage by ophthalmic surgeons. My plan of operating is as follows:—The eye is steadied with forceps held between the thumb and the two first fingers, whilst the ring-finger is used to elevate the upper lid to such an extent as will enable the operator to make the necessary section. The sensitive natural speculum possesses this great advantage—that it can recognise the commencement of a spasmodic effort on the part of the patient and at once give the necessary relaxation, and as the section is nearing its completion the gradual withdrawal of the finger allows the lids to close gently and without effort. If an iridectomy is to be made, the upper lid should be lightly raised at its edge, with the ring-finger of the left hand, whilst the iris is seized with suitable forceps held between the thumb and the first two fingers. It will thus be seen that the operator is able to dispense with the aid both of speculum and assistant. The above plan is so simple and, with a little practice, so easy of accomplishment, that it may very possibly have been already adopted; but as I have seen no mention of it, and as I have already operated by it successfully in a considerable number of cases, both in private and at St. Mary's Hospital, I think it right to put my experiences on record. (Mr. Anderson Critchett, p. 342.)

Cataract Extraction.—Chisolm's Method of Sealing Lids after.—The kind of plaster is of great moment. I have experimented with several kinds of silk, muslin, cambric, gauze, &c., and the form now used is the best yet arrived at, and answers our purpose admirably. It is silk salicylated isinglass plaster (Seabury and Johnson's). It is quite transparent; put on a book it is

very easy to read printing through it. It quickly dries readily adheres, is easily fixed in its situation, and does not tend to curl up, which is often a characteristic of such plasters. The plaster before being applied may with advantage be a little snipped at several places along its edge, to enable it to fit more accurately, and whilst it is drying it is often advantageous to push the cheek upwards to prevent displacement by facial muscular movements. In cataract cases it is essential to seal up both eyes, and this is generally true of other cases, but occasionally I have only closed one eye, and often allow the sound organ liberty before the other is permitted it. It would appear that formerly in some hands plaster was used for closing the eyes after cataract operations, but I believe in a much less complete manner than Chisolm has advocated, and the routine practice, with perhaps every operator, has long been the use of bandages and pads, which his plan numbers among the things of the past. Such a method would hardly have been feasible in the pre-cocaine days. My experience of the plan is particularly gratifying, and is moreover pleasing alike to my assistant and the nurses. The advantages, particularly in cataract cases, of the plan Chisolm advocates over the routine method by bandages, may be summed up thus:—1. More comfortable to the patient, and less dread of injury by movements. 2. Less discomfort to nurse and friends, or in hospital to other inmates of the ward, from less darkening of rooms. 3. Less liability to disturbance, and thus more freedom in movements permitted to patient. 4. More evenly and exactly fitting. 5. Thus allowing a more correct coaptation of wound, and, it is believed experience will prove, a more ready healing. 6. Inspection of eye is allowed without disturbance, for in this way swelling of lids or discharge are readily seen. 7. It affords a ready means of using eserine or atropine without disturbance of eye, and allows drainage of tears, &c. 8. Absence of photophobia and lachrymation; when eye is opened, a ready examination in good light is allowed, patient being able to open eye fully. 9. Less confinement to bed, quicker convalescence, and shorter stay in hospital. (Mr. Simeon Snell, p. 345.)

Cataract.—Objective and Subjective Symptoms of.—What are the symptoms, objective and subjective, of cataract? With what is the diagnosis likely to be confounded? Speaking now of ordinary senile cataract, age is the first point which attracts our attention. Degeneration of the lens-tissue as the result of uncomplicated senile changes is rare before 45 years of age, although it may occasionally occur earlier, especially if there is, as is not unfrequently the case, an inherited tendency to the disease. I have at present under my care an old lady 70 years of age who suffers from senile cataract; two of her daughters, one 39 the other 41,

each suffers from incipient but well-marked cataracts. Again, some years ago, an elderly gentleman was under my care who suffered from cataract, his brother was the subject of the same disease, and two of his brother's sons, aged 39 and 41, were both similarly afflicted. There can be no doubt, then, that it is a malady which shows strong hereditary tendencies. Well, then, when a patient advanced in years comes to you and complains of failing vision, especially for distant objects, the symptoms being unaccompanied by pain in the eye or head, and there having been no history of any kind of inflammatory affection, your first suspicion will be of cataract. Your suspicions will be materially increased if the patient complains of seeing worse on a bright day, and better towards twilight and dusk. If you give him type to read, he will probably turn his back to the window and try to assist himself by shading his eye with his hand. He may complain of halos round lights or of their looking distorted or drawn out, perhaps even of monocular polyopia. It may seem superfluous to explain the *rationale* of these symptoms, because some of them are obvious. The bright light contracts the pupil, leaving a comparatively small opening in an already hazy lens. In nuclear opacity, therefore, the sight will be much interfered with, as it occupies the part of the lens opposite the pupil; in cortical cataract much less so, as only the peripheral parts are affected; in some cases a contracted pupil may even help sight. The distortion of lights and halos is produced by changes in the refrangibility of the lens, the result of alteration in its density; and the polyopia is the result of transparent passages being left in the cataractous lens, each such passage producing a faint image of its own. Although advanced cataract can generally be diagnosed objectively at once without difficulty, in the earlier stages it is not always so easily detected. Where there is doubt, use should be made of oblique illumination, and in still more doubtful cases the pupil should be dilated with atropine. In this way we shall be able to clear up all doubts as to the nature, condition, situation, and probable rate of development of the cataract. This method of examination, together with the use of the ophthalmoscopic mirror, will further enable us to determine if the cataract is complicated with other diseased conditions, a point of much importance when the advisability of an operation is in view. At an early part of this lecture I stated how at first sight the greenish-grey appearance of the lens, which is natural in advanced life and is more marked in some diseased conditions, might be mistaken for cataract. Oblique illumination dispels any doubt in these cases, and the clear red reflex from the fundus when the ophthalmoscopic mirror is used confirms this proof. Patches of opacity in the lens, when viewed by the mirror alone, appear as dark objects with the red reflex of the fundus as a

background. This phenomenon, which is clear and unmistakable, is owing to the reflection of light from the fundus being obstructed. It occurs equally with opacities in the vitreous chamber, but these are not, when care is taken and oblique illumination used, very liable to be mistaken for opacities in the lens. Indeed there are few or no maladies which can easily be mistaken for cataract when proper precautions are used; but cataract is so frequently complicated with other conditions, and these may play such an important part in lowering vision and influencing the prospects of an operation as to deserve our greatest attention. Lenticular opacity is liable to occur in glaucoma, in iritis after synechia have taken place, in high degrees of myopia, after detachment of the retina, in the final stages of retinitis pigmentosa, and other conditions. I may perhaps best clear up the difficulties which beset the diagnosis of a case of cataract by stating the symptoms we should expect to be present in an uncomplicated case, and afterwards referring to the inferences which may be drawn from any departure from these lines. In an ordinary case of uncomplicated cataract, the result of senile changes only, we should expect, first, that there should be an absence of any signs of diabetes, albuminuria, or other blood contamination. Locally there should be a well-defined round and active pupil, both to direct and indirect stimulation. The loss of sight should be only in proportion to the visible opacity in the lens. This is a symptom which it is difficult to estimate without considerable experience, as it is liable to much variation. The field of vision should have undergone no diminution of its area. The tension of the eye should be the subject of the most careful examination, and any hyper-tonicity should lead to a minute investigation of the early symptoms and history of the disease. When a case of cataract presents all these favourable symptoms, we may look hopefully to a successful issue, but any departure from them, however slight, should make us give a guarded prognosis. (Mr. C. S. Jeaffreson, Newcastle-on-Tyne, Lancet, Feb. 27, p. 388.)

Central Blepharoraphy.—At the Ophthalmological Society, on March 11th, Dr. Argyle Robertson read a paper on the Operation of Central Blepharoraphy after enucleation. Many patients were unable to afford the expense of an artificial eye, or were unable to replace artificial eyes, or else the resulting conjunctival cavity was unfitted for the adaptation of an artificial eye. In these cases considerable deformity and discomfort were liable to arise in connexion with the conjunctival sac: papillomatous growths might arise, or the upper lid fall in and the lower one gravitate downward, leaving the conjunctival sac exposed to various irritations. To prevent these consequences, Mr. Streatfeild, about twelve years ago, recommended the removal of the

conjunctival sac by dissection and caustics after enucleation had been done. The author considered that a central blepharoraphy would prove simpler and quite as effective in preventing the evil consequences of enucleation. The lower lid is grasped with a pair of stout forceps held parallel to the edge of the lid, and the conjunctival covering of the free edge of the lid is dissected off with a cataract knife to the extent of five or six millimetres, corresponding to the centre of the lid, care being taken not to damage the roots of the eyelashes. The upper lid is treated in the same way. Both are brought together by means of a horse-hair ligature. No drainage is needed. Healing takes place readily by first intention, and on the fourth or fifth day the ligature may be removed. The operation could also be employed for long-standing spasmodic ectropion of the upper eyelid. In this affection the tarsal cartilage has a faulty curvature imparted to it. After the eyelid has been kept by the central blepharoraphy in its natural position for some time, the tarsal cartilage regains its normal curvature, and the adhesions may be divided. He had operated on two such cases with very successful results. (Dr. Argyle Robertson, Lancet, March 20, p. 547.)

Eye-Drops.—*Paper Spoons for.*—Most instruments used for placing drops on the eye have their disadvantages. They cost money, the hairs from brushes may be left behind, quills and glass-droppers are dangerous in inexperienced hands, bits of rag are dirty, &c. I have been, for many years, in the habit of directing patients to make their own droppers, by simply cutting a piece of clean paper in the form of a little spoon. These spoons are made in a few seconds, and are costless. A clean spoon may be used every time that drops are used. Being made of soft paper, no harm can be done to the eye. (Dr. F. A. A. Smith, Portsea, British Med. Journal, July 17, p. 112.)

Foreign Bodies in the Ear.—*The best Method of Removing them.*—I quote the following passage from an interesting pamphlet by Mr. Ernest Maylard. He is speaking of the importance of museum illustrations of the anatomy of the ear, in order that students may know the curves of the external auditory canal, and thus be made competent for the every-day duties of practice. He writes: "How many unfortunate patients have had the membrana tympani ruptured by pushing in a foreign body in the fruitless endeavour to pull it out, from ignorance of the curves and direction of the external auditory canal. I know of one case, which came immediately beneath my notice, where death occurred indirectly from the inflammation set up by a foreign body in the ear. The body was extracted, but not until the evils of previous delay and vain endeavours at removal had rendered the patient's recovery hopeless. But instances too numerous

must exist in the knowledge of every surgeon." My own experience, like Mr. Maylard's, comprises more than one case of this kind; and, whilst I quite agree with him as to the importance of good anatomical knowledge, I am yet induced, by his statements of recent experience, to try to draw attention to a method of treatment which I long ago advocated, and which is so simple and efficient that it almost supersedes the need of knowledge. It is the use of a silver wire-loop, instead of either forceps or scoop. I have never, since I was a student, used either of the latter instruments; and, for the purpose of extracting hard bodies from the ear, I hold that they are most dangerous. With a flexible silver-wire loop, or, if need be, with two placed at right angles, I have repeatedly succeeded when all other means had failed. Thus, not only is the loop quite devoid of danger, but it is both more easy of use and far more efficient than any other method. It is impossible that it can injure the membrana tympani, or the walls of the canal. The method of procedure is, after having put the patient under an anæsthetic, to introduce the loop gently into the ear, and turn it about until it is believed to have got behind the foreign body. This it will often do at once; but sometimes a little patience is necessary. In one instance, I took out a piece of heavy lead in this way with very little trouble, using two loops at right angles with each other. The simplicity, safety, and efficiency of the method make it desirable that it should be better known. (Mr. Jonathan Hutchinson, British Med. Journal, April 10, p. 690.)

Hypopyon-Ulcer of the Cornea.—*Treatment by Cautery and Iodoform.*—The cautery which I use consists of a small platinum bulb situated at the end of a rod, shaped something like a squint-hook. The platinum bulb very readily heats in a spirit-lamp, and the cautery is very handy, and answers well the purposes required. It is made by Pickard and Curry, and now also by Weiss. If the corneal ulcer be touched round the edges and on its surface with this cautery, in many cases healthy action speedily sets in, and the pus in the anterior chamber clears. My experience with the cautery leads me to assert that in it and iodoform we possess the two best means for treating hypopyon-ulcer. In many cases the action of iodoform is very marked. It should be used very finely powdered, and may be placed freely between the eyelids twice a day. A little gentle manipulation of the eyelids to ensure its dispersion is often of service. Many cases will by this means very speedily assume a healthy aspect and the hypopyon clear up. In a case recently under treatment, a very bad example, with great swelling of lids and conjunctiva, the ulcer was in the first place cauterised, and improvement was very visible the next day. Iodoform was now put into the eye every morning, atropine was instilled, and in the evening warm

poppy fomentations were used. At the end of ten days, the eye had recovered from a condition of the greatest danger, and only a small nebula will be left in the cornea. (Mr. Simeon Snell, Practitioner, April, p. 269.)

Perforation of Membrana Tympani by a Triangular Flap, for Permanent Opening.—In the Surgical Section of the Academy of Medicine in Ireland, on Jan. 22nd, Dr. M'Keown described a method of making an Artificial Perforation of the Membrana Tympani which would remain open for a period varying from two weeks to two months. He made a triangular flap of the membrane, commonly selecting either that part in front of, or that behind, the handle of the malleus. He used a speculum, and illuminated the membrane by the frontal mirror. He then introduced the knife—a very fine straight knife with thin handle,—punctured the membrane in front of, or behind the top of, the handle of the malleus, cut upwards as far as he could, then made a second incision, beginning below, either at the anterior or posterior part of the membrane, as the case might be, and in a horizontal line with the lower end of the first incision, and cut upward till the two incisions joined. The flap thus formed, unless in case of very thickened membrane, fell down, or might be turned down with a fine probe, and commonly remained in position, adhering to the membrane below by blood exuded from the cut surface. He had operated on a considerable number of cases—some of long standing,—and he gave particulars of some of the most interesting. The ordinary incisions hitherto practised, except to discharge products of inflammation, were of no therapeutic use whatever. The operation proposed was not for the purpose of making an artificial way for the waves of sound, but to give rest to the ear for a long period, and to induce a nervous and vascular equilibrium favourable to the absorption of deposits and restoration of function. Most troublesome obstructions of Eustachian tubes of long standing had given way to this treatment alone. As to relief of tension in old cases, a simple incision closing in a day or two could do no good, but an opening for a period of from two weeks to two months might do a great deal. Time was the very essence of the question from a therapeutic point of view. He illustrated the use of the method in diagnosis, and also in opening a way for efficient treatment of some cases of hypertrophic change of the lining of the middle ear. So far as he could follow his cases, he found none were made worse, some were not benefited, but the majority were more or less relieved, some to a remarkable extent. (Dr. McKeown, Belfast, Lancet, April 10, p. 691.)

Retinitis Albuminurica in Pregnancy.—It has long been known that pregnant women were liable to suffer with dis-

turbances of vision, from slight impairment to complete and permanent blindness. This was known long before Bright's time, the cause being usually referred to cerebral origin. We now find it due, in the majority of cases, to renal disease. It occurs at varying times during pregnancy, from the second to the eighth and ninth month, but is more apt to occur during the last four months. It may occur after abortions. Many cases have been reported where the retinal disturbance produced blindness for weeks, and then, after labour, complete recovery obtained; and others, less fortunate, remained partially blind. The occurrence of this disease during pregnancy opens up some very interesting points as regards the proper plan to pursue. Eastlake reports an interesting case of a patient, aged 34, who had had nine children at full term and no miscarriages. At the birth of the first child she had no ocular symptoms; on the second day after the birth of the second child, and after all her seven subsequent labours, she suddenly became totally blind in both eyes, which lasted from three to five weeks. Ophthalmoscopic examination of these eyes long after demonstrated only the existence of contracted retinal arteries and blanched optic nerve —the last stages of albuminuric retinitis. (Dr. W. Oliver Moore, New York Med. Journal, April 17, p. 435.)

YMPATHETIC OPHTHALMITIS.—At the Ophthalmological Society on March 11th, the Report of the Committee on Sympathetic Ophthalmitis was read by Mr. Nettleship. It was based on a detailed analysis of about 200 cases of sympathetic ophthalmitis, collected by the Committee as bearing upon certain points in its nature and treatment. About eighty of these were contributed by members of the society, to whom a circular had been sent; the rest were from published sources. In respect to excision of the exciting eye, the conclusion arrived at was that whilst its removal, soon after the onset of the sympathetic inflammation, had not been proved to have any marked effect on the progress of the sympathetic disease, it certainly did not increase the severity of it. Comparing equal numbers of cases in which the exciting eye was, and was not, removed (soon after the onset of the sympathetic disease), the proportion in which the disease was fatal to sight was much greater in the latter group than in the former. The apparent value of this evidence in favour of early excision, however, was somewhat diminished by evidence of another kind, which tended to show that the excess of recoveries after excision was partly due to the natural mildness of the disease in that group, and the excess of losses when excision was not done, to its natural severity. In respect to mercury, the conclusion was tentatively arrived at that the drug had probably little, if any, effect; of 50 cases which recovered completely, and were treated locally in much the same way, mercury was

administered to exactly one-half. The effect of operation (iridectomy) on the sympathising eye performed early in the disease was thought to be less unfavourable than was commonly held. In a small series of cases, an iridectomy had been performed on the exciting eye soon after the sympathetic inflammation had set in, and in nearly all with a favourable result to both eyes. The important question was next considered, whether sympathetic ophthalmitis could be set up by an eye in which no perforation had ever taken place. After a very careful and thorough examination of cases, the Committee had come to the conclusion that the occurrence of the disease without perforation of the exciter, if known at all, was, at any rate, extremely rare. In reply to questions as to the longest and shortest intervals, respectively, between the lesion of the exciting eye and the onset of sympathetic disease, only about a dozen cases were found in which an interval of more than a year occurred, unbroken by recurrences of inflammation in the exciting eye; and only 18 in which the interval was a month or less. The longest interval where the exciter had been wounded was twenty years, the shortest nine days. There seemed to be reason for believing that the length of the interval was not without influence on the severity of the sympathetic ophthalmitis: the proportion of cases in which blindness ensued being considerably greater when the disease had set in after a long than after a short interval. Consideration was then given to all the cases (about 30) in which sympathetic ophthalmitis was known to have set in after excision of the exciting eye; in 5 cases after as much as from four to eight weeks; in all cases, the exciting eye had been wounded, and had been left long enough to undergo changes capable of setting up the disease; and the conclusion was drawn that, in these cases, the sympathetic attack was due to the influence of the wounded eye, and not to the operation for its removal. The prognosis in these cases was shown to be much better than in ordinary cases, as more than half recovered entirely. After reference to certain anomalous cases happening many years after excision, and to others where iritis followed the removal of the exciter within a day or two of the injury, the report concluded with a notice of the cases of so-called uncomplicated sympathetic neuritis. It had been found that these cases differed much amongst themselves, and probably could not all be ascribed to the same cause, nor be taken as pointing to transmission along the optic nerves, whilst the papillitis which often occurred early and remained late, in ordinary cases of sympathetic ophthalmitis, was far from proving that mode of transmission, since the same papillitis was commonly seen in cases of idiopathic serous iritis, even when only one eye suffered. (British Medical Journal, March 20, p. 547.)

MIDWIFERY, AND THE DISEASES OF WOMEN, ETC.

Albuminuria of Pregnancy.—*Prognosis in.*—When the eclampsia has not terminated fatally, the course of the kidney disease is not as a rule severe. In the great majority of cases the albuminuria disappears in from ten to twelve days, and the patient is well. Nevertheless, observations are not wanting to prove that this favourable result is not always to be expected. Frerichs says that if the albuminuria continues for more than fourteen days, although there is temporary improvement, still we have to face the evil prospect in every case of chronic Bright's disease. Leyden's own experience teaches him not to expect a favourable termination with so much certainty. Cases in which the albuminuria is persistent are relatively frequent. Of ten cases which he had under observation last year, owing to persistent albuminuria after confinement, only one was completely cured. One was under treatment for six months without any improvement, and in the others there was diminution in the amount, but not complete disappearance of the albumen. It is evident from these observations that this kidney affection may pass into a chronic stage; and from other observations the author is satisfied that the disease may run on to a stage of granular atrophy. He mentions the facts of a case in which death occurred five and a half months after parturition. The form of granular atrophy shown by the kidneys was the red, genuine contracted kidney, the same form as is also found in lead-poisoning. (Dr. Sinclair's abstract of Leyden's paper in Deutsche Med. Wochenschrift, Medical Chronicle, May, p. 152.)

Puerperal Albuminuria.—Its Pathology and Significance.—I have examined the urine of one case of puerperal albuminuria in which the pregnancy and labour had terminated without mishap, and in which the urine, although still containing a large amount of albumen, was rapidly becoming normal. Here I found, as in the case of functional albuminuria already described, that there was an entire absence of serum-albumen and a precipitate with nitric acid and heat, which was composed entirely of globulin. Thus, if my observations be correct, and I of course admit that they must be multiplied before making any generalisation, this form of puerperal albuminuria, which cures itself, is chemically allied to functional or cyclic albuminuria, and a strong suggestion arises that, as in the latter, so in the former, we have no organic kidney mischief. It is, from a practical point of view, highly desirable to diagnose during the progress of a pregnancy the one form associated with organic change, which will probably not recover, from the other form, in which, from what appears above, there is probably no organic change, and which will recover. Retinitis is a complication which under

other circumstances is generally found in connexion with organic change in the kidneys and serious symptoms. It is important, then, to ask if, when it occurs in puerperal albuminuria, it has the same grave significance; if the cases of puerperal albuminuria associated with retinitis invariably continue after delivery as cases of chronic Bright's disease; and if, finally, we may call this complication to our aid, possibly together with the chemical phenomena I have mentioned, in determining the prognosis of a given case. To summarise the above remarks, there is undoubtedly a form of puerperal albuminuria which is associated with an organic lesion of the kidney, and which we may call nephrogenic; but there is also another form, in which there is probably no such kidney lesion, which is probably due, as I believe, to the profound blood change of pregnancy, and which may hence be styled hæmatogenic. (Dr. R. Maguire, Lancet, Sept. 18, p. 525.)

Amenorrhœa.—*Permanganate of Potash in.*—Dr. Fordyce Barker, as the result of his experience, has never known the permanganate fail in any of the following groups of cases:—1. Girls between the ages of 14 and 19, who come from the country to finish their education. Home sickness, entire change of their habits of life and associations, over-tax of their brain-power, from their own or their teacher's ambition to accomplish more in a given time than they ought to attempt, not unfrequently lead to an arrest of menstruation. 2. Patients, both young and married, who suffer severely from sea-sickness from leaving some European port within a few days of the menstrual period; with such amenorrhœa is almost sure to follow. 3. Patients between 30 and 40, generally married, some of whom have borne children, who rapidly begin to gain flesh, while at the same time menstruation decreases in both duration and quantity, until at last it is only a mere pretence. This is generally attended with annoying nerve disturbances, pelvic weight, piles, and often mental depression from the apprehension of growing old prematurely. In all these cases permanganate of potash is said to effect a speedy cure. These results have been in a great measure confirmed by Dr. W. H. Thomson, Dr. C. C. Lee, and Dr. Bellington, all of whom have used the drug since the appearance of the article by Drs. Ringer and Murrell in the Lancet. (Lancet, June 12, p. 1133.)

Cancer of Uterus.—*Extirpation of.*—My present feeling is wholly opposed to extirpation of the uterus for cancer of the fundus, chiefly on account of the difficulty which attends the diagnosis and precise determination of the extent of the disease in such cases. The death-rate following such operations will be high, and the chance of immunity from recurrence small. In

cases of early cancer of the cervix the limitation of the neoplasm can be ascertained with tolerable certainty; the removal of the upper portion of the vagina together with the uterus would not add much to the risk of the operation, and would notably diminish the probability of recurrence. These are the kind of cases for which vaginal hysterectomy should be afforded a fair trial, and the results ought to be as good, at least, as those of recognised operations for cancer in other parts of the body. Mr. Foreman, writing from Sydney, states that he has excised the uterus for cancer per vaginam five times successfully, so far as the immediate results were considered. From this experience he adds: "I am convinced that, if we only get the cases before the neighbouring parts are infiltrated, the ultimate results would be far better than the removal of cancerous breasts. If a case be too fixed for removal, I leave it alone. In future I shall always extirpate where it is possible to do so." (Mr. Charles E. Jennings, p. 393.)

Cancer of the Uterus.—Differential Diagnosis of.—In looking through my private case-book, I find that the most simple conditions have been mistaken for cancer. One patient presented herself, where the pain and hemorrhage were due simply to an entire absence of molar teeth. Imperfect mastication, colicky pains, deterioration of health, and emaciation followed. The condition was entirely relieved by the insertion of a set of artificial teeth, proper regulation of the diet, and the administration of a light tonic. The uterus was merely chronically hypertrophied. Pregnancy, with an intensely granular condition of the cervix, where there is a copious vaginal discharge, seems to be one of the conditions by no means unfrequently mistaken for cancer, more especially if there have been any symptoms of threatened abortion, or even hemorrhage from a granular cervix. Fibroids in various stages, during expulsion, and in process of sloughing, or when extruded into the vagina, seem also to puzzle the practitioner. Retained products of conception, overlooked abortion, where some laceration or granular condition of the cervix uteri exists, simulate cancer in some instances. Even hemorrhage and pain from a vascular caruncle of the urethra, where a fibroid tumour coexisted, gave rise to a most deplorable mistake in one instance. Pelvic hæmatocele, diagnosed as cancer, figures in several instances; the peculiar hue of the complexion typical in cases of hæmatocele being mistaken for the cancerous cachexia, more especially when the pain and hemorrhage are severe. One case presented apparently such manifest symptoms of cancer, that an error in diagnosis seemed impossible. A "cancer-crater" admitting the finger, a rough, hard, friable surface, bleeding readily on touch, incontinence of urine, and a most foul vaginal discharge, seemed to leave no

room for doubt; but the detection and removal of a forgotten pessary, introduced many years before, imbedded in the anterior vaginal wall, and having ulcerated through into the bladder, not only relieved the symptoms, but removed "the cancer." Chronic hypertrophy—the areolar hyperplasia of Thomas—where the cervix is lacerated, and the pain unusually severe, contributes a fair number of cases of error of diagnosis. Inversio uteri, although comparatively rare, should not be forgotten. The history will generally keep us from error. Pelvic cellulitis following parturition, where the cervix is lacerated and ectropion occurs, may deceive the unwary, more especially if there be any placental débris and hemorrhage in consequence. Endometritis, with a marked history of syphilis, where the cervix uteri is extremely bulky and the discharge very profuse, is by no means an uncommon cause of error. Chancres upon the cervix uteri, although exceedingly rare, have yet led to serious mistakes being made. In cases at all doubtful, the fact of free hemorrhage occurring on vaginal examination often enables us to determine the malignant nature of the affection. I regard this as one of the most reliable symptoms. The cervix may be lacerated, the edges everted, with an intensely granular degeneration of the mucous membrane; and yet, on withdrawing the finger, no trace of blood is detected, showing that the case is not malignant. The age of the patient will also assist us. Cancer of the uterus is comparatively rare before 35, although I have seen fatal cases so early as 26. After the menopause, if a patient begin to lose blood *per vaginam*, there having been an interval of a few years, the case is pretty sure to be malignant in nature, provided alcoholism can be excluded. We must not forget, too, that cancer does not invariably begin in the cervix uteri; it may arise in the fundus uteri. These cases are more numerous than generally supposed. The nature of the discharge in cases of epithelioma of the cervix is generally very characteristic. It is not the usual muco-purulent secretion met with in many instances, where the cervix is merely the seat of granular degeneration, or the vagina is in a state of chronic inflammation. It is more of a serous or sero-sanguineous nature, having a peculiar characteristic pungent odour, acrid, and producing excoriation of the vulva and surrounding surfaces. The character of the pain in malignant disease is different from that met with in mere chronic hypertrophy of the uterus, or granular degeneration of the cervix. In the former case, the pain is almost invariably worse at night, when the patient is lying down; whereas in the latter the pain is worse on standing, and relieved when the recumbent posture is assumed. The so-called cancerous cachexia is not always a reliable symptom. It is often simulated in cases of hæmatocele, and where persistent or frequent recurring hemorrhage from a pro-

jecting intra-uterine fibroid or polypus occurs. Besides this, when the disease has advanced so far as to cause the constitutional cachexia, the local condition is generally so evident as to preclude any error in diagnosis. (Dr. Arthur W. Edis, British Medical Journal, March 6, p. 438.)

Convulsions during Pregnancy.—*Pilocarpine in.*—Dr. Horrocks comments as follows upon a second case of convulsions during pregnancy (see page 360) treated by the injection of pilocarpine. "In the Lancet of June 13th, 1885, I published the the notes of a case successfully treated by the subcutaneous injection of pilocarpine. The case I now publish is the only one I have had under my care since, and these two cases are the only ones I ever treated with pilocarpine at any time, and both have resulted very satisfactorily so far as the mother was concerned, but fatally to the child. Both these cases were very severe, as will be gathered from the clinical accounts. In both the cessation of the convulsions following the use of the pilocarpine was so quick and complete as to render it highly probable that the result was *propter* rather than merely *post*. An interesting point in the present case was the failure of the first solution used, owing to the fact that it had been made for some months. It not only failed to produce sweating, but the convulsions did not cease. After we had obtained a fresh solution and given an injection, the effect was quick, and there were no more convulsions. Obviously, therefore, in treating these cases by this method, a potent drug must be employed, and fortunately we are able to know whether it be potent or not by the presence or absence of profuse per piration. If the patient does not begin to sweat within five minutes, the drug may be looked upon as useless, and a fresh solution obtained. Another point was the rapidity of the dilatation of the os, and the quick expulsion of the child after the administration of the pilocarpine. It would appear that pilocarpine must be looked upon as an ecbolic. The child was alive at 12·30, but when born, about four hours later, it was quite dead. Whether this was owing to the pilocarpine, or the convulsions, or the uterine contractions set up by the pilocarpine, or some other cause, must be left to future investigations." (Dr. Peter Horrocks, Lancet, April 3, p. 635.)

Curette.—*Use of in Intra-Uterine Disease.*—At the meeting of the Obstetrical Section of the Academy of Medicine in Ireland, on May 7th. Dr. Atthill said that some years since he had been stoutly opposed to the use of the curette. Now, however, he had changed his opinion, as well as others which he formerly entertained. He now looked on the curette as a most useful instrument, and freely employed it in many cases. The prin-

cipal question was, ought they to use the curette as a diagnostic means without previous dilatation of the uterus, or ought they to dilate the uterus first and use the curette afterwards? He believed, however, that the instrument was appropriate only to a certain proportion of cases. If the patient were a woman who had had several children, and who had a patulous cervix through which a finger could be thrust, and if she were suffering from a thickened and unhealthy mucous membrane, a small curette might be introduced without any anæsthetic, and the bleeding part removed. Generally, there should be dilatation first, and then the use of the curette; but there were cases in which the curette, without previous dilatation, as a diagnostic process, was justifiable and advisable. In many cases it was impossible by any digital examination to ascertain what was the exact condition of the fundus. He believed that, for twenty years, in no case in which there was hemorrhage, and in which he found no polypus, had he applied nitric acid without first using the curette. He agreed with Dr. Smyly that the curette *per se* was safer than dilatation. With a soft cervix dilatation was perfectly safe, provided antiseptic precautions were used. But there was danger in dilatation if attempted rapidly with a rigid cervix, neglecting antiseptic precautions. Most serious symptoms resulted from attempts to dilate the uterus where there was an exceedingly rigid cervix. He would almost prefer to divide the cervix in such cases. For many years he (Dr. Atthill) had used nitric acid very generally without dilatation; and whenever he used the curette his practice was to apply nitric acid or some other agent at the end of four or five days, and through a cannula. He now frequently used intra-uterine injections, usually iodised phenol or iodine, though in his earlier lectures he denounced the introduction of any fluid into the uterus. (Dr. Lombe Atthill, Lancet, July 24, p. 167.)

Dry Dressings for Internal Cavities.—Dry dressings being now all the fashion, and to my mind most justly so, I wish to draw the attention of the profession to a very simple method of applying, in the dry state, dressings, styptics, &c., to such cavities as the vagina, uterus, and rectum. The only apparatus required is a hollow cacao-butter suppository, which suppositories are made in various sizes, the largest of which will just about hold one drachm of any ordinary powder. These hollow suppositories are filled with the powder that may be wished to be used as a dressing; the small lid, after being gently heated, is put on; this when cool remains fixed, and the whole apparatus is then ready to be introduced into the vagina or rectum. The heat of the body soon melts the cacao butter, and the powder is then brought, in as dry a state as possible, into direct contact with the parts. During the last six months I have used these suppositories

most freely, and have been more than satisfied with the result. I have tried all sorts of powders, and as the result of my own experience strongly recommend the following, either alone or in various combinations as required. Firstly, as a styptic, I most strongly recommend powdered *iron-alum*. I generally order one drachm of powdered iron-alum and five grains of iodoform, to be well mixed together, the powder to be inserted into a hollow suppository and used as directed. In the treatment of uterine hemorrhage I am convinced there is no remedy of more universal application, and none on which I could with greater confidence rely. I have used it in severe hemorrhage from uterine fibroid, from uterine polypus, from uterine cancer, bad miscarriage, and in several cases of menorrhagia at the change of life, and it has never yet failed me. All that is required is to introduce the suppository as high as possible into the vagina, and there leave it. It is as easily applied by the nurse as by the doctor, and is in every way perfectly safe and harmless. Secondly, as a dressing *iodoform* stands pre-eminent; in fact, I now seldom use anything else. This, when combined with from a quarter to half a grain of morphia, forms by far the best dressing for uterine cancer that I have yet tried. Thirdly, *morphia*, either alone, or as I generally now use it, in combination with either or both of the above, is a great aid to the physician and comfort to the patient. After attention has once been drawn to this simple mode of applying these various applications, the numerous uses to which they might be put in the various vaginal, uterine, and rectal discharges and diseases will occur to all. I have only very briefly ventured to suggest the use of those which in my own hands I have found deserving of confidence. I have no doubt that hundreds of the profession are at present using this mode of dressing; but, on the other hand, I know that there are hundreds who are not, and it is to persuade those who have not yet tried them that I venture to bring this subject forward. (Mr. Charles F. Hutchinson, Scarbro', Lancet, Feb. 13, p. 300.)

Eczema of the Vulva.—*Climacteric Diabetes.*—Roughly speaking, the conclusions that I have arrived at concerning this affection are that in the great majority of cases of eczema of the vulva at the climacteric period, the disease is due to the presence of sugar in the urine. I have not yet come across a case of this kind in which, having examined for sugar, I have not found it. The disease seems to begin at or near the arrest of the menstrual functions, and to extend over a period of several years, then terminating in all probability by nature's own process. The sufferings of the patient are very much diminished, and probably the duration of the disease is shortened, by the liberal administration of opium; whilst the local trouble is best mitigated by ointments containing such substances as will arrest the process

of fermentative change in sugar. So far the best substance that I have found for the purpose is the old-fashioned hepar sulphuris. (Mr. Lawson Tait, Practitioner, June, p. 408.)

Endometritis.—*Local Treatment.*—If there be much hypertrophy and excessive sensitiveness, I content myself with the introduction, twice a week, of a tampon, saturated with glycerine of alum and boracic acid, which I make sufficiently large to act as a support as well as a depleting agent. In a short time, varying from a week to a fortnight, it is generally practicable to commence intra-uterine medication; but sometimes this requires to be done for the first few times while the patient is under chloroform. This consists of an application to the whole endometrium of a saturated solution of iodine in carbolic acid; after which a tampon is introduced, and allowed to remain *in situ* for three days, when it is removed, and another applied for a like period. Of course, if a laceration of the cervix exist, this must be at once repaired, or the pendulous portion amputated, after the hypertrophy has been reduced by the local measures indicated. If not unfrequently follows that the presence of a mucous polypus is recognised, when most of the symptoms of endometritis have disappeared. This is, doubtless, a result of the prolonged irritation of the Nabothian follicles or mucous membrane. If such be present, it will prevent a complete restoration of the parts to health, and it frequently accounts for a satisfactory result being difficult to attain. With the removal of the polypus, however, the difficulty will end. (Dr. Robert Bell, p. 368.)

Hysterectomy for Uterine Fibroids.—*Results.*—Although the results of hysterectomy have improved in the last few years, very much in the same way as ovariotomy improved after it was taken up and carried out in a scientific manner, yet it does not seem likely that it will ever stand on an equality in its results with ovariotomy. There are many circumstances connected with the nature of the case, and with the operation itself, that tend to cause a larger mortality. The best treatment of the pedicle or stump, now quite settled for ovariotomy, is still a matter for consideration in hysterectomy. For a few years, when the ovarian clamp was discarded, it was thought best to treat the uterine stump by ligature, and drop it in. Success did not follow this practice, as in the sister operation; and, of late, recourse has again been had to the clamp, or extraperitoneal plan. Theoretically, the intraperitoneal method appears the most scientific, and various devices have been adopted to ensure its success: namely, tying the stump in segments by a number of ligatures; sewing the peritoneal edges together over the stump, so as to form a cap or covering over the raw surface; this is aided again by taking out a wedge-shaped piece from the stump on the distal side of the

ligature, by the application of the actual cautery, and also by tying the vessels in the stump separately. Hemorrhage has proved a formidable danger in many instances, whether intra- or extra-peritoneal. The chief objections to the extra-peritoneal method are the greater liability to septic absorption, hemorrhage, the too early separation of the clamp, and the much greater delay in the healing of the wound and subsequent convalescence. This latter objection, though not so important as the former ones, is yet a factor in the consideration. As regards the causes of death, putting aside such unforeseen accidents as tetanus, hemorrhage, too early separation of clamp, &c., I think nearly all the deaths will be found to be due to septicæmia in one of its many manifestations. (Dr. Thomas Savage, p. 382.)

New Suture Twister.—The accompanying woodcut represents a new form of twister for wire sutures. The old form and that of Sims had the disadvantage that the suture got frequently wound round the stem of the instrument, and was disengaged with difficulty. The ends of the suture wire being passed separately through the end of the tube on either side of the small cross-bar, and pushed on till they protrude at the top, are then doubled over, and slipped into slits on each side of flat-plate which forms the handle, by which the tube is rotated; the wire with ring attached by collar to the end of tube being held by the other hand, and used to direct the point of twister to the spot where the suture is to be tightened. This being twisted from above downwards is not hidden from view, and the exact amount of tension can thus be given to a nicety in drawing together a fistula, or open wound of any kind, beyond the reach of operator's fingers. I have found it most useful in Emmet's operation "Hystero-Tracheloraphy." It also forms a useful snare or miniature écraseur. (Dr. Alexander Duke, M.K. Q.C.P.I., Ex. Assist.-Master Rotunda, Gynæcologist, Steeven's Hospital, Dublin.)

Peritonitis after Abdominal Section.—*Treatment.*—Speaking on 139 successful ovariotomies, Mr. Tait says: This success in abdominal surgery has been the basis of a large number of lessons applicable within its own range, and not without benefit to other fields. It has, for instance, absolutely destroyed our fear of the peritoneum, and has justified our opening that sacred sac very much as we open our pockets. It has revolutionised our notions of pathology in some directions, and has confirmed

them in others; and it, above all things, overwhelmed with confusion the utterances of therapeutic dogmatists. Baker Brown, after a series of disasters, uttered the truism, "It's the peritonitis that beats us." Now, we beat the peritonitis. On the slightest indication of peritonitis after an ovariotomy, we give a rapidly acting purgative, it matters not what; the patient's bowels are moved, and the peritonitis disappears. This practice I introduced in 1875, and it is now almost uniformly adopted. How different from the views we had drilled into us years ago, that opium was the sheet-anchor of the practitioner in all abdominal troubles, when I say now that all opiates are forbidden in my practice, unless they be required to ease a dying patient out of the world. (Mr. Lawson Tait, p. 398.)

PESSARIES.—*Four Notes on the Use of.*—At the Carlisle Medical Society, on Feb. 11, Dr. Maclaren, after shewing the remains of a pessary which had been in the vagina of a woman, aged 73, for thirteen years, laid the following *notes* before the Society in regard to the use of the instrument. "1. *Always teach the patient to remove and introduce her pessary, and reject all pessaries which do not allow of this.*—I am sure that every useful purpose can be served by an instrument which may be taken out each night and replaced in the morning. I do not very often use pessaries, but still I see sufficient uterine disease to come across most varieties of it. And one of three pessaries meet all my requirements,—a watch-spring, a Hodge, or a Zwank. There is no difficulty whatever in getting a patient to use these in the way I have stated. 2. *Always have the pessary made of a material impermeable to moisture.*—Soft, pure rubber or vulcanite are the best. Leaving in diluted Condy's fluid over-night will make such perfectly clean and odourless. A pessary which is at all absorptive becomes very foul and offensive. 3. *Get your patients to soap all soft rubber pessaries.*—Oil spoils the rubber, making it soft and porous. 4. *Be sure that a pessary is needed.*—No doubt pessaries have been used too frequently. There are women who seem to derive much mental and physical comfort from having their vaginal canals turned into marine stores for some variety of curious little instruments, and find rest in the assurance of a displaced womb which has been put right. Now, before advising the use of a pessary, we should be sure that there is a mechanical basis for the symptoms which a mechanical remedy will rectify. The fact of a uterus being in some other than the typically normal position is not in itself a reason for using a pessary." (Dr. Maclaren, Edinburgh Med. Journal, April, p. 969.)

PUERPERAL ECLAMPSIA.—*Treatment.*—Unquestionably the most efficient treatment of puerperal convulsions is blood-letting, for by blood-letting we draw from the system the agent which is the

most important factor in the production of uræmia. But it may be said by some that venesection is not recommended in the treatment of the convulsions of acute Bright's disease. Why then should it be used in puerperal cases if the same essential causes prevail in both? I believe, however, that it is a mistake not to treat the convulsions of non-puerperal Bright's disease in the same manner, and that if bleeding were more common, the results would be more satisfactory. I do not hesitate to advise you to bleed in the convulsions of acute Bright's disease. No harm can follow the removal of from eight to sixteen ounces of blood from an adult patient, so that if it does no good, it does no harm. You must not, however, expect equal success, because there is still an important difference in the conditions. In the instance of renal disease accompanying the puerperal state, the termination of this state not only removes the remote cause of the disease, but the disease itself is usually less advanced, and the chances for recovery may thus be increased. Afterward, or coincidently with this measure, anæsthetics are often of great service, and the patient is kept, with great advantage, more or less thoroughly under the influence of chloroform or ether, in order to keep off the convulsion. This is not always necessary, for in many cases chloral answers every purpose. There is no condition in which chloral can be relied on more confidently, in connection with venesection, than in puerperal convulsions, and in the convulsions of Bright's disease. It must be given in full doses. I usually give an adult one drachm of chloral by enema. It is not worth while to give a smaller dose. The dose named may be repeated; but in the majority of cases one dose is sufficient. Chloral has the advantage over anæsthetics, in that it is possible to judge accurately of the condition of the patient. When a patient is under chloroform or ether, it is impossible to note the changes in mental condition by which almost alone we are to judge of improvement. If blood-letting and chloral are not sufficient, chloroform or ether must be resorted to. Chloroform, dangerous as it is in ordinary surgical operations, appears to be harmless in puerperal conditions. (Dr. Jas. Tyson, p. 402.)

Puerperal Fever.—At the British Gynæcological Society on Feby. 24th, Dr. Barnes, speaking in an adjourned discussion upon a paper by Dr. Chalmers, said he wished especially to dwell upon one condition, that lay at the very foundation of the history of puerperal fever, and without admitting which, it was impossible to arrive at an intelligent conception of the disease. And yet it was a condition very much neglected. He had long insisted that a puerperal woman might develop fever out of the natural processes going on within her, that is, that there was an autogenetic puerperal fever. It arose in this way. During gestation, the blood assumed a peculiar character; the vascular and nervous

system was in high tension. The volume of blood increased, new vessels developed, and new tissues formed in subservience to the need of the embryo. The vascular force was divided from the centre to the periphery. The process was one of building up. There was no absorption of superfluous matter, beyond the usual waste of nutrition. But the moment labour had taken place, a sudden revolution occurred. On the second or third day, the superfluous tissues of the uterus, and other tissues brought into existence during gestation, underwent rapid disintegration, and must be as rapidly got rid of. The vascular force had become centripetal. The tide had turned. The process of absorption was now intensely active. Volumes of effete stuff were quickly sucked into the circulation; and, unless the excreting organs were in good working order, the stuff that should be eliminated accumulated, the healthy blood was overpowered, and fever was kindled. Here there was the story of autogenetic puerperal fever. There was no need to invoke the hypothesis of an extraneous poison. Such cases might be seen on close search, especially in private practice, where the patients had the best provisions for security against the invasion of poison from without. But it was in this condition, peculiar to the puerpera, that the nidus for the reception and evolution of noxious poisons from without was found. Then there were the heterogenetic puerperal fevers. If the poison of scarlatina, diphtheria, or other zymotic, or any septic matter effected an entrance, it found the most favourable conditions for setting up fever, zymotic or septicæmic. But this could not be simple septicæmia, as might occur in an ordinary surgical patient. In the puerpera, something more was found than the wound and the poison from without. Indeed, it was not necessary to postulate a wound at all. The Germans, drawing their experience chiefly from the enormous mortality in their lying-in hospitals, which was certainly due to the working of extraneous poison, ran into the error of contending that this was the sole cause. Their minds were engrossed by this preponderating evidence, and they conclude that there was no autogenetic puerperal fever. The absence of marked symptoms of pain, high pulse and temperature, in peritonitis with suppuration, even running a fatal course, noted by Dr. Chalmers, was by no means uncommon. He approved of the use of iodine, for the purpose of injection, and appreciated the value of quinine. (Dr. Barnes, British Med. Journal, April 10, p. 693.)

Still-Birth.—*Method of Resuscitation.*—Never hurry, it is not a question of seconds, and success depends upon a fine exercise of the judgment. Make a good diagnosis, first, as to life or death; secondly, as to the stage of asphyxia (if life is not extinct). If the child is macerated, it is obviously dead and past hope. If the heart beats, ever so slowly and feebly, it is not dead. If the

heart is not beating, death is not certain, unless it can be proved to be inactive for some time. If the child is livid and not flabby, it will probably come round; wipe out its mouth and pharynx, and rub it with a soft cloth down the spine, press gently on the cardiac region. If this produces no effect, inflate the lungs by the mouth, and then by Silvester's method. If air enters the lungs, well and good: if not, try Schultze's method, or insert a catheter, as described above. On the first sign of muscular action, plunge the child into cold water, or into alternate hot and cold baths. Vary the treatment between occasional inflation of the lungs, artificial respiration, pressure over the cardiac region, baths, irritation down the spine, according to the judgment; remembering what may be expected of each method, and that no one will suffice for all cases. Watch for signs of resuscitation, namely, improvement in the colour, in movements, in cardiac pulsations, as described above. Never be content until the child breathes regularly, and appears to be continually improving. [Schultze's method will be found fully described at p. 414, vol. xciii. of the *Retrospect.*] (Dr. F. H. Champneys, International Journal of Med. Sciences, April, p. 465.)

Sudden Death in the Puerperal State.—At the Harveian Society, on May 6th, Dr. Jones briefly traced the history of the evidence on which hypertrophy of the left ventricle in pregnancy rests, and raised the question whether this hypertrophy was ever wanting, and if so, what were the results. Cases were detailed in which clinical investigation showed apparently absence of all hypertrophy, and in such patients signs of cardiac failure and insufficiency were observable; the possibility of repeated miscarriage being also referred to this cause was shortly touched upon. Attention was drawn to the close tie existing between the heart and the uterus, and the extreme probability that the return of the heart to its normal size after delivery was, as in the case of the womb, due to a gradual process of fatty metamorphosis. While under healthy conditions this process was devoid of danger, arguments were adduced to show that in some patients this process of fatty change might overstep the normal boundary, and by weakening the cardiac muscle leave the heart liable to be overwhelmed by secondary conditions insufficient in themselves to bring about a fatal issue. Cases were read in support of this view. In conclusion, some of the cases quoted in the literature of sudden death in and after pregnancy were brought forward, and the explanation given of death in the various cases criticised, with the purpose of showing that in most of these the fatal result could be more scientifically accounted for under the view already enunciated than by referring them to such obscure conditions as idiopathic asphyxia, &c. (Dr. M. Handfield Jones, Lancet, May 29, p. 1022.)

Turning.—*Causes of Difficulty in.*—At the Obstetrical Society on June 2nd, Dr. Herman read a paper on one of the Causes of Difficulty in Turning, with remarks on the Practice of Amputating the Procident Arm. The author describes difficulty in turning due to impaction of the point of the shoulder below the imperfectly dilated internal os. In these cases there is no great difficulty in seizing the lower extremity, but when this has been done the condition described prevents the child from rotating. The proper way to overcome the difficulty is to press the point of the shoulder towards the middle line of the cervical canal, and thus disengage and raise the shoulder. When this is done the child is easily turned. The author then refers to the writings of those who have advocated amputation of the arm in cases of transverse presentation which cannot be turned, on the ground that turning becomes easy when this has been done. He believes that these cases were of the kind now described by him, and that the amputation of the arm was effective by removing the resistance offered by the impacted shoulder. But he did not think amputation of the arm was proper in such cases, for the child could be turned if the point of the shoulder was disengaged in the manner he had described, and if the child were dead, decapitation was better than amputation of the arm followed by turning. (Dr. G. Ernest Herman, p. 365.)

Uterine Fibro-Myomata.—*Medical and Surgical Treatment.*—At the Cambridge Medical Society, on June 4th, Mr. Knowsley Thornton commenced with some remarks on the general medical and dietetic treatment of patients suffering from uterine fibro-myoma; objecting to the use of stimulants and iron, and urging the value of ergot employed between the periods, and the reasons against its use during the flow. Surgical aid could often be avoided by judicious diet, medicine, and mode of life. He then proceeded to give in detail three cases upon which he had recently operated, to illustrate the difficulties in differential diagnosis between solid ovarian tumours and fibro-myomata, and between cystic ovarian tumours and fibro-cysts of the uterus, using the tumours (which he had on the table) to demonstrate the various points as he discussed the cases. His conclusions were: 1. That some ovarian cysts, from their method of growth and the way in which they stretch out the layers of the broad ligament, uterus, and bladder, cannot be differentiated from uterine tumours. 2. That some uterine fibro-cysts, especially if complicated by solid fibro-myomata, cannot be differentiated from ovarian cysts. 3. That some pedunculate fibro-myomata grow so fast, cause such emaciation and so little hemorrhage, that they cannot be differentiated from solid ovarian sarcomata. 4. That the ovarian cysts, which burrow deeply in the cellular tissue round the uterus, are slow and uncertain in their growth,

are often causes of considerable pain and distress, are apt to give rise to inflammatory action, which, if allowed to recur from time to time, renders their removal extremely difficult, and, from their seat, are especially liable to interfere with the action of the kidneys and lead to serious inflammatory or cystic changes in these organs. 5. That in view of the impossibility of exact diagnosis in some cases, exploratory operation should be advised whenever there is danger of interference with the ureters by intra-pelvic pressure, whenever the presence of the tumour gives rise to recurrent attacks of pelvic inflammation, and whenever other symptoms indicate operation. 6. That the operator who undertakes to perform ovariotomy must be prepared to find himself face to face with the most formidable hysterectomy which it is possible to perform, and therefore no one should undertake these operations without being fully provided with the appliances necessary for the completion of such exceptional cases. In his concluding remarks, he dwelt upon the impossibility, when operating for fibro-myoma, of deciding beforehand whether the case was suitable for hysterectomy or for the removal of the uterine appendages, and then referred to some practical points in the performance of these operations. He had operated 88 times for uterine fibro-myoma, and 74 of the patients were alive and well, 11 of the deaths having occurred in the first half of the cases and only three in the second half. (Mr. J. Knowsley Thornton, London, Lancet, July 31, p. 211.)

Uterine Sickness.—*Diagnosis of.*—The diagnosis of the presence of uterine vomiting is usually not difficult, though in some cases circumstances do not attract attention to the uterus as the actual cause. The stomach, the liver, the gall-bladder, and bile-ducts, the intestines, the nerve-centres, &c., may be at fault, and the possible causes of vomiting are almost too numerous to recapitulate in this place. The diagnosis of uterine-vomiting requires a careful exclusion, therefore, of many possible diseases, an exclusion not always very easy to substantiate. One of the most common cases met with in practice is the confounding of uterine sickness with "biliousness," as it is termed. I have frequently been informed by the patient that she suffers much from "bilious attacks," which have been traced on inquiry to the uterus. I am in fairness obliged to state that, in one long-standing troublesome case, where the patient had suffered from troublesome sickness, with no particular sign of liver or biliary disease, a large biliary calculus was subsequently evacuated from the bowel. What adds to the diagnostic difficulty of cases of uterine sickness is the fact that, in some cases, the uterus itself may be found devoid of unusual sensibility to the touch, and that the patient makes no complaint directing attention to this organ particularly. In many cases, there is a complaint of pain referred to the

uterus, severe pain in the groin, or in the lower part of the back; but I have before my mind some very severe cases, where it was not imagined by those who had seen the cases before that the sickness was due to the uterus at all. It rarely happens, however, that the uterine functions are carried on in a normal manner; in these cases, menstruation is either irregular or very painful, or menstruation is accompanied by special exacerbation of the vomiting, and it is obvious enough that there is uterine disturbance of some kind present. (Dr. Graily Hewitt, British Medical Journal, July 24, p. 148. See also page 358 of this volume.)

Vomiting of Pregnancy.—*Rectal Injection of Chloral in.*—In the vomiting of pregnancy, where the causes are so obscure and probably so various, we are forced to call the trouble reflex in character until its etiological factors are more clearly demonstrated. Certain it is that those remedies and methods of procedure for its treatment which have met with greatest favour are mostly directed toward a diminution of reflex irritation and spinal irritability (under methods of procedure may be included cervical dilatation, removal of inflammation, uterine displacement, &c.). These actions are possessed in a high degree by chloral, and must, in the absence of any convincing physiological data, account for its value in this affection. The use of chloral in the vomiting of pregnancy is recommended, especially in enemata, by Playfair, Leishman, Busey, Atkinson, Eulenberg, Richardson, of Boston, and Simmons, of Yokohama In conclusion, I would state my conviction that, while it should be given in large doses to be effective, it is not safe to employ the rules for rectal dosage usually followed in the administration of dry extracts and less soluable medicines. If the rectum be cleansed, the dose ordinarily should not be increased more than twenty per cent. above the proper dose in the individual case *per os.* Dr. Reamy cites a case in which forty grains of chloral injected into the rectum at once arrested the vomiting. (Dr. T. A. Reamy, Ohio, Medical News, Feb. 27, p. 232.)

PRACTICAL MEDICINE.

DISEASES AFFECTING THE SYSTEM GENERALLY.

ART. 1.—ON THE ACTION OF ANTIPYRIN AND THALLIN.

By RAYMOND JOHNSON, M.R.C.S., late House Physician to University College Hospital.

[Mr. Johnson having made some clinical observations, at the suggestion of Dr. Ringer, upon the action of antipyrin and thallin in cases of acute rheumatism and phthisis, expresses his opinion of the relative merits of the two substances, as follows:]

The most important difference between these two drugs, which is demonstrated by almost all the cases in which they were used, is in the duration of their effects. The lowering of the temperature produced by antipyrin lasts usually for many hours. In one instance the temperature did not rise above 98·6° for thirty hours after the drug was stopped. The rise is gradual and occupies several hours. Thallin, on the contrary, produces a very transitory effect, the rise often beginning within two hours after stopping the drug. This rise is very rapid, and hence is often accompanied by shivering. The influence of antipyrin and thallin on the pulse and respiration appears to me to be very slight. The pulse is usually only slowed by a few beats per minute. In one case, in which antipyrin produced a fall of temperature from 100·2° to 96°, the pulse was only slowed by four beats per minute, and the rate of respiration was unaltered. The experiments of Dr. K. Bettelheim, made in the laboratory of Professor v. Basch at Vienna, led him to a similar conclusion. Professor Pribram, however, considers that antipyrin has a marked effect on the pulse and respiration.

The various toxic effects produced must now be briefly considered. Vomiting has been frequently noted after the use of antipyrin; much more rarely after thallin. In two cases at University College Hospital antipyrin produced severe vomiting: once in a girl aged twelve years suffering from typhoid fever, after fifteen-grain doses; once in a case of phthisis after twenty-grain doses. The same symptom occurred after the administration of thallin in three-grain doses to a patient with rheumatic fever, who was similarly affected by salicylate of soda. In one other case, nausea, but no vomiting, followed the drug. During the administration of these drugs symptoms of collapse were carefully watched for. In the first case of phthisis detailed, marked prostration followed the use of antipyrin in three doses of ten, twenty, and twenty grains respectively. Similar symptoms were observed in a boy to whom

three fifteen-grain doses were given at intervals of one hour. In no case did thallin occasion any prostration. Looking to the literature on the subject, we find reference made by several observers to cases in which prostration appeared to follow the use of antipyrin. In the Lancet of Feb. 28th, 1885, a case was recorded by Mr. Blore, of the Leeds Fever Hospital, in which extreme collapse, terminating fatally, followed the administration of antipyrin, and he concluded "that the extreme depression accompanying the fall of temperature was directly due to the action of the drug." The sweating which accompanies the fall of temperature appears to vary considerably in different cases. As a rule it is not marked and causes no inconvenience, but in the two cases in which antipyrin caused collapse the fall of temperature was attended with very profuse sweating. In their tendency to produce shivering or rigors the two drugs differ. This we should expect from a comparison of the rapid rise following the fall produced by thallin, with the gradual rise after antipyrin; and all observers seem agreed that shivering and rigors frequently follow the use of thallin, but rarely of antipyrin. In every case of phthisis in which thallin was employed for any length of time shivering frequently accompanied the rapid variations in temperature. In one instance a severe rigor, lasting nearly an hour, occurred during the use of one-grain doses hourly. The temperature rose from 100° to 104·8° in two hours. In the case of typhoid fever above mentioned a similar effect was produced. One grain of thallin was being taken every hour on the twenty-first day of the disease. The temperature rose from 101·8° at 9 a.m. to 105° at 2 p.m., and at 1 p.m. a rigor commenced, and lasted for thirty minutes. An exanthematous eruption following the administration of antipyrin was first described by Dr. Ernst, of Zurich, and has been seen by many other observers. Thallin more rarely causes a similar rash. This eruption occurred in the case of the boy mentioned above, in whom symptoms of collapse followed the use of three fifteen-grain doses of antipyrin. The rash appeared about one hour after the last dose was given. It consisted of small rosy-red spots over the chest and abdomen, and to a less extent on the limbs. On the face and neck the rash was confluent, and closely resembled scarlet fever. It lasted about an hour, and then gradually faded away. The peculiar appearance of the urine in patients taking thallin has been already mentioned, and constantly occurred. It closely resembles that so often seen in the surgical wards from the absorption of carbolic acid.

Taking all things into consideration, it seems to me that the evidence is strongly in favour of antipyrin. Any slight advantages which thallin may possess are more than counterbalanced by the transitory nature of its action, the frequently repeated doses which are therefore necessary, and the great liability to the occurrence of shivering or rigors. This conclusion agrees with that of most

German observers. Unless, therefore, future investigations shall disclose some yet undiscovered advantages in thallin, we may, I think, decide to employ antipyrin in preference to it in any case in which a rapid antipyretic effect is desired. Still more is antipyrin to be preferred in cases such as phthisis, where a long-continued use of the drug is necessary. Regarded as a purely symptomatic remedy, the unanimous verdict is that antipyrin is a most efficient agent.—*Lancet, Aug.* 28, 1886, *p.* 388.

2.—ON TWO CASES OF ANTIPYRIN-RASH.

By James E. Blomfield, B.A.Oxon., Radcliffe Travelling Fellow.

Since antipyrin has been used as an antipyretic drug, several inconveniences have been recorded against it, amongst which is the production of a rash. This has generally had the characters of a transitory erythema, which disappears while the administration of the drug continues, and is of a similar appearance and nature to the erythemata produced by salicylates or quinine. It has generally been produced by a full dose, and accompanied by profuse sweating, but in the two cases to which I wish to draw attention the rash was produced during the administration of the drug in small quantities, when there were no other symptoms produced. The cases occurred in the Hertford British Hospital at Paris, in the service of Dr. Faure Miller, through whose kindness I am allowed to publish them.

The first case was that of a coachman twenty-eight years of age, who, on admission to the hospital, presented the signs of acute phthisis. He had been much addicted to drink, and the disease made rapid progress; the expectoration was profuse and the temperature ran high, reaching every evening between 39° and 40° Centigrade, and seldom falling in the morning below 38°. In addition to the condition of his lungs, he presented a systolic murmur at the heart's apex beat, and a considerable extension of liver-dulness, while his larynx was affected so that at times his voice could hardly be heard. After he had been in the hospital about a fortnight, and had been treated symptomatically according to the indications, it was determined to see if antipyrin, by reducing the fever, would benefit his general condition, as several French observers have recently much vaunted this drug, one even making the remark that it was the specific of tuberculosis, in that it rendered the condition of the patient so much more comfortable. Accordingly he was given seven grains dissolved in water three times a day. At first no undesirable symptoms appeared, though the benefit derived from the drug was very questionable, except in a slight fall of the temperature-curve, which for three days was not above 38° Centigrade; but after this date a certain amount of tolerance seemed to be established, and the curve ascended, though

not quite to its original height. The dose was then increased to twelve grains three times a day, but after three days of this dose, and after thirteen days of the antipyrin treatment, a rash appeared. It began during the night, symmetrically situated on the extensor surface of each knee. It consisted of erythematous patches raised slightly above the level of the skin, of an Indian-red colour, which faded completely on pressure. Here and there were a few vesicles of the size of a No. 6 shot. The patches of erythema varied from about one-eighth to half an inch in diameter, and were circular in shape. The antipyrin was stopped, but the rash continued to extend, first to the thighs and legs, and then over the whole body, being more marked on the extensor surfaces.

The only inconvenience which the patient experienced from its presence was the itching, which at times was rather distressing, but as the rash began to fade this became much better. The history of each patch appeared to be that after its appearance for two or three days it increased in size towards the periphery, and then the central area began to fade, and in about two days more the whole patch disappeared. After the disappearance of the eruption, there was a slight branny desquamation in the parts which had been most affected.

The second case was that of a jockey, aged thirty-six, also an alcoholic subject, who on admission showed all the signs of acute tuberculosis, with rapid breaking down of both lungs. The temperature ran high, and as attempts were made to reduce this with three well-known antipyretics, it is interesting to compare the results.

In the first four days after his admission the morning temperature was never below 39°, and the evening temperature about $\frac{1}{2}$° Centigrade higher. He was given quinine in doses of twelve grains and then of eighteen grains in the twenty-four hours. This appeared to have little or no effect on the evening rises, but lowered the morning temperature about half a degree. This drug was continued for about eight days and then discontinued, when the temperature-curve again assumed its old form. He was then given thallin in doses of two grains three times a day. This produced little effect, and in two days the dose was raised to four grains three times a day. The effect was more marked, the temperature-curve presented a more broken appearance, the morning register often marked 37°, though the evening reached 40°; but taking the average, the real amount of fever was less. Beyond this alteration in the temperature, there was nothing else that commended the continuance of the drug.

Antipyrin was then given in the same doses as in the previous case, viz., seven grains three times a day. For the first two days its effect was well marked in the diminution of the evening rises,

but this did not last long, and soon they acquired their old level, while the morning falls were not so low as during the administration of thallin. In making this comparison between the three drugs, it must be remembered that the quantities used may not have been equivalent in antipyretic power, and that the physical conditions for the production of heat may have changed.

After ten days of the antipyrin administration, a rash appeared very similar to that before described. When first seen by the nurse, it was on the forehead, but the patient said it was also on his knees, so that it may have appeared in the latter part first. The anatomical characters of the rash were exactly the same as those described above, with the exception that there were no vesicles and no itching. It did not extend quite so rapidly, but affected the whole of each lower extremity with a more marked abundance on the extensor surfaces. The chest, abdomen, and back were not attacked, but the face and arms were well covered. It disappeared in a similar fashion to the first, leaving a like but more scanty branny desquamation. In conclusion, I would add that the specimen of the drug used was the same in both cases.—*Practitioner, April*, 1886, *p.* 261.

3.—WILL CANCER EVER BE CURABLE? WITH A SUGGESTION AS TO THE TREATMENT OF EARLY CASES OF EXTERNAL CANCER.

By James Braithwaite, M.D.Lond., Obstetric Physician to the Leeds General Infirmary, and Lecturer on Gynæcology to the Medical Department of the Yorkshire College.

I believe the explanation of the occurrence of cancer to be to this effect: When old age attacks the body as a whole, we look upon it as a natural thing. The whole of the tissues become gradually a little less active in their growth, are a little less rapidly formed, and each individual molecule or cell a little less rapidly dies, and is replaced. Along with this slowing or retardation of both waste and repair, the pabulum, from which each individual cell draws its nourishment, becomes less rich, for the blood itself is becoming older. The cell which draws upon its supply more slowly has therefore its supply more slowly formed, and all is consequently in proper proportion, and old age of the cell as of the individual goes on in a natural manner. But what happens if a set of cells become old before their time, the pabulum from which their waste is supplied being as good as ever it was—the pabulum of youth with the cell of old age? The senile cells die and are replaced by new ones—more slowly, no doubt, but the young senile cell, finding itself stimulated by the nutritious serum around it, and having lost to a great extent its original properties, reverts to the condition of its remote ancestor, the embryonic cell, which is almost indis-

tinguishable from a cancer cell, and so becomes practically a fungus. This reversion to the embryonic cell allows of unlimited appropriation of pabulum and unlimited growth. The whole process is therefore a want of contemporaneous senility. If this were an explanation approaching the truth we ought to find cancer most common in well-nourished individuals approaching old age, and in those parts of the body which naturally become useless about that time, such as the womb and breast. This is precisely what occurs. Cases of cancer of the womb are much less commonly met with in pale, anæmic, or ill-fed women, than in the plethoric and well-nourished. The typical woman for cancer of the uterus is stout, florid, has a good appetite, but is weak, easily fatigued, and leads a life free from much toil. Work, and hard work, leads to removal of effete material. The fungus cancer is more likely to attack the tissues of a body, the nutrient material in which stagnates for want of use and removal.

If this explanation were true cancer should be more common in the upper and middle classes than amongst the poor and ill-fed. My impression is that this is the case. It is particularly common in London in proportion to the population; and I have noticed how comparatively few cases of cancer are seen amongst the poverty-stricken out-patients of the Leeds Infirmary.

This theory explains such a case as the following:—An old woman had a cancerous growth springing out of one nostril, and projecting to about the size and shape of a walnut. Every day there was a little epistaxis, not much, but regularly recurring. I tried various means to stop this without success, because the bleeding occurred from the posterior part of the nostril if arrested at the anterior outlet. After some months it was evident that the old woman would bleed to death. I proposed removing the growth and plugging the nostril, but she would not hear of it. She was old and tired of life, and "would rather die quietly." But—and this is a most interesting fact—the hemorrhage killed the cancer before killing the patient, and it came away entire, with everywhere a smooth surface on the long stalk-like portion which had been in the nares. The patient then recovered her health, and lived for two years, infirm and weak, but otherwise well. I never saw her again, but subsequently ascertained that in two years the disease had reappeared, and she died from it in about twelve months, or rather less.

It is evident that cancer requires good nourishment. This to some extent is generally admitted, and directions are usually given patients to let their diet be moderate, and even abstemious. It is not found that life is prolonged by the opposite plan, for the disease becomes rapid in growth.

Sir James Paget relates the following case:—After a cancerous breast was removed the cancer recurred, and grew rapidly; the

patient's health failed, phthisis ensued, and the patient finally died from that disease, *the cancer having gradually healed.* This is almost a parallel case to the one I have recorded above. The cancer was killed before the patient; it could not bear the loss of nourishment.

My point, then, is not simply senility of a cell, but comparative senility, whereby a senile cell, having from natural causes lost its original properties, its self-restraint and increase only as required for purposes of health, takes on itself a new and exuberant form of growth. It thus becomes practically a fungus, and grows at the expense of the tissues around it. Its principal characteristic is that it requires plenty of food; given that and it will grow; cut off that, and it will languish, or even die, as in the two cases related.

There is yet another way in which this animal fungus can be started, and that is, local irritation. This is well known, and I need say little about it except that the cells, which are so stimulated into disease, are probably deficient in something necessary to their complete functional health.

Shall we ever be able to cure or arrest this disease? I am afraid not: but in some cases we may, and my principal object in writing this paper is to put before the reader several curious cases in which, at any rate, the affection seemed to be modified by treatment. All we can hope for ultimately is to be able to arrest or render quiescent cases of recent origin. Cases fully developed, where extensive parts are invaded, always will be incurable, unless it is ultimately found that a bacterium is at the root of the matter; but I think this will not be discovered.

Three years ago a woman came to the Women and Children's Hospital, to which I was then one of the surgeons, with a cancer of the breast, the size of a moderate-sized apple. She said it was growing pretty quickly and was painful. The house being full I gave her as a placebo, extract of belladonna, thinned with a little glycerine, to be kept constantly applied to the breast, beneath a piece of oiled-silk. She came in a week or two to say the pain was relieved, and as we had several operation cases on hand I consequently deferred her admission again. The next time she came she said the lump was smaller, and I continued the belladonna for two months, by the end of which time I had no doubt whatever that the tumour was smaller. It was not much smaller, but even supposing I was mistaken in this, it was quite certain that growth had been arrested. She continued to attend another month, and seeing her no more I called upon her at home in about a month or five weeks. She was still using the belladonna but her supply was nearly exhausted and she promised to come for more. She still considered the tumour smaller. I examined it and thought that it was nearly the same size as it had been three months before, but it had not grown. I never saw this patient

again, partly because I was too busy to call upon her and afterwards because I laughed at my own credulity in supposing it possible that cancer could be modified in its growth by belladonna or anything else.

About a year after this (February, 1884) a woman, forty-three years of age, very large and stout, but feeble, fell in going up a steep street. She thinks she became unconscious. She fell with her right hand doubled up and pressing upon the skin between the right breast and the clavicle, but quite clear of the breast by two inches. There was no one about at the time and it was late at night. She must have fallen very heavily for she lost her artificial teeth, but went back next morning and found them where she had fallen. She probably laid there some minutes. Next day she felt that the place where her hand had been was painful. After this six weeks elapsed and she then discovered a small lump at this spot. This grew a little in size and was occasionally slightly painful, or sufficiently so to draw her attention to it. She sent for me six weeks after first noticing the lump, that is, twelve weeks after the accident. I found a hard tumour just below the skin, which felt adherent to it, the size of a small walnut. It was not painful to pressure and the skin above it was pale. It was pretty moveable in consequence of the great thickness of fat it was embedded in. I had not much doubt that it was a cancer, but could not be absolutely certain. She objected strongly to any operation, so to gain time, and afterwards persuade her to have it removed, I applied belladonna, as in the preceding case. The tumour at once began to lessen in size, and in four months it had quite disappeared. On recently questioning the patient she says that she could always feel "a little something by pressing very deeply." My impression was that it had quite disappeared, but no doubt the patient was right. I told this case to several of my friends who laughed at my idea that it could have been cancer, and I dismissed the subject from my mind, thinking it could have only been inflammatory.

On August 27, 1885, she sent for me again, and I then found the tumour as before, but larger than when I had first seen it. It was at least two inches in diameter. She stated that she had remained free from it for four months, but that six months ago it had reappeared and was rapidly increasing in size. I commenced the belladonna at once and the tumour remained absolutely stationary for about three months. Then I thought, but was not quite sure, it was increasing a little in size. I measured it as well as such a growth could be measured and found that it was very slowly growing. On February 5th, last, it measured just two and a half inches from side to side. I now committed a fatal error, I injected into the centre of the tumour a few drops of the belladonna. All antiseptic precautions were taken but the track of the needle never healed, and at the spot where it had been inserted an angry red

zone appeared covered by thin skin. This was owing to the cancer cells taking on a new and more rapid development which was propagated throughout the whole tumour, for the red zone, which was elevated above the surrounding parts of the tumour, rapidly spread over the whole, and ulceration commenced at the point of puncture. The patient is still living but there is a deep and increasing cavity which frequently bleeds.

In December, 1885, I was sent for to see a lady seventy-three years of age with a small cancerous tumour of the left breast. This has now for nine months remained absolutely stationary, the belladonna having been constantly applied. Mr. Jessop has seen this patient with me recently and heard the statement of her niece, that she thought it even less than it was last Christmas. My impression is that it is exactly as it was, but I am quite certain it has not grown. I do not lay much stress on the value of belladonna in this disease, for my experience of it is too limited. All I say is—you have no other remedy to propose—try it. I have given all the cases I have used it in with the results. The cases are too few, but these cases now rarely come under my observation, and cancer of the womb which I see more frequently is not a fit subject for the use of belladonna. If you remove by operation a cancer of the breast, the chances are that it will return rapidly with increased virulence.

At the same time most cancer patients should be put upon rather starvation diet, and I have some impression that occasional small bleedings would not be amiss when the patient is plethoric. We see, however, that in cancer of the womb excessive hemorrhage does no good, but harm. I am here only speaking of early cases of cancer of the breast in which it is proposed to try the belladonna. When, however, it is decided to remove a cancer of the breast I have a very strong feeling that the knife should be avoided. Arsenical paste will gradually eat out a cancerous tumour and leave almost untouched the neighbouring healthy parts. I have seen a tumour so removed—round and entire—the size of an apple, and the breast perfectly healed and showing no signs of return twelve months afterwards.—*Provincial Medical Journal, October*, 1886, *p.* 437.

4.—DIAGNOSIS OF CYSTIC TUMOURS OF THE BREAST.

By Thomas Bryant, F.R.C.S., Surgeon to Guy's Hospital.

In the examination of every tumour of the breast, and particularly of one in a woman over thirty-five, the surgeon, as a matter of habit, should allow the possibility of the case having a cystic origin to pass before his mind. By so doing he will not only prevent errors of practice which may be grievous, but at the same time he will guard against sources of serious mortification,

for, I take it, there are few things more humiliating to a surgeon than an error in practice based upon a wrong diagnosis, when the error is not due to the inherent difficulties of the case, but, to a want of care. When the tumour is in the breast of a woman over forty years of age this caution is more necessary, for cystic tumours of all kinds are more prone to occur in women over thirty-five and past the prime of life than in younger subjects. In 1861, I, however, removed a sero-cystic tumour from the breast of a girl aged twenty, which had been growing for three years, and at the time of operation measured twenty-two inches in circumference, and weighed after removal two and a half pounds. When the tumour seems part of the breast-gland itself and appears as a single or possibly double growth in one or more lobes of the gland; when the swelling is very hard and tense and is not the seat of pain even when handled; when it has existed for several years and has given rise to no other symptoms than such as are referable to its mechanical presence, the probabilities of the tumour being cystic are very great. When the swelling is bossy or botryoidal, and fluctuation can be detected in some of its parts; when with the swelling there is a discharge from the nipple, and this discharge can be increased by pressure or manipulation, the diagnosis of cystic disease is evident, and with the nipple discharge the diagnosis of a duct-cyst is clear.

Whether the cysts be simple or proliferous is another question, and if the latter, the nature of the growth they contain is still a third. In a general sense it may be said that a single cyst is more probably simple than when the cysts are multiple and form a polycystic tumour; that is, when a lobule of a gland is expanded by the presence of a single cyst that cyst is more likely to be of a simple kind than when the cystic disease has involved more of the lobule. Simple polycystic disease of the breast is a rare affection, except as a result of general glandular degeneration. When a discharge from the nipple exists, and that discharge is bloody, the probabilities of a cyst containing some intracystic growth, however small, should be recognised, since it is from the vessels of the intracystic growth that the bleeding as a rule takes place. Simple cysts rarely bleed. When the bleeding is encouraged by or has followed manipulation, the probabilities of the cyst containing an intracystic growth are very great. When a cystic tumour exists in a lobule of the gland as a fluctuating swelling in some parts and a more solid one in others, the diagnosis of solid with cystic growth is tolerably clear; and when with this there is a free discharge of a bloody kind from the nipple, the diagnosis of cystic duct and glandular disease is highly probable. These lobular cystic tumours often present a somewhat typical shape, that of a pear, the narrow part of which is represented by the nipple. Few of these tumours cause pain. Advice is sought as a rule either on

account of the tumour or on account of the nipple discharge, not from pain.

The *diagnosis of a cystic adeno-fibroma or adeno-sarcoma* is to be made out by attention to the same points as help the diagnosis of these growths when uncomplicated with cysts. That is, a cystic adeno-fibromatous or sarcomatous growth simply troubles from its size or from its nipple discharge. By its growth it expands the integument over it and spreads out such portions of the breast-gland as may not be involved, but it in no other way involves its coverings. The skin may be stretched even to a rupture, but even then the skin as tissue will be neither invaded nor infiltrated with disease. The cysts themselves may even burst and discharge their contents externally, but under such circumstances the integument that fringes the edges of the ruptured orifice will still be seen free, and can be readily distinguished even from the extruded or extruding intracystic fungating contents. The nipple may be so flattened out as nearly to be indistinguishable, but it will only in very exceptional cases be drawn in by the disease, as seen so frequently in cancer; and even should it be drawn in, inquiry will generally reveal the fact that such a condition was either congenital, or that some cicatrix of a former abscess had altered its normal shape. Should the cyst be, however, more central and separate the lactiferous ducts, nipple retraction is to be expected.

The lymphatic glands (axillary and clavicular) will rarely be involved; when they are they will be affected actively from lymphatic irritation rather than from lymphatic absorption, and under such circumstances the enlargement is more frequent when the cysts have burst through and irritated the skin than under other circumstances. In some forms of rapidly-growing cystic sarcomatous as well as solid sarcomatous tumours, the lymphatic glands are, however, seriously affected.

The *diagnosis of cystic carcinoma* will turn upon the same points as that of the more common kind of cancer. Though the growth may have originated in a tube or cyst it will not long be confined within its capsule, for, obedient to its nature, it will invade its cyst walls and creep into the tissue outside; it will then spread into the neighbouring parts by the one marked way in which carcinomatous tumours locally spread, viz., by steady and progressive infiltration or local infection; the carcinoma in its progress having first infiltrated the cyst in which it originated, then the tissues outside the cyst, later on those which surround these, and last of all, the integument itself; the infiltration of the integument first showing itself as a "dimpling" of the surface, next as a "puckering" of the skin, thirdly as an "infiltration" of the skin, and lastly as an ulceration. Should a cyst so enlarge as to encroach upon the skin and to infiltrate it and later on rupture through it, the intracystic carcinomatous growth will project and grow

through the opening, but the edges of the orifice through which the intracystic growth projects will be found infiltrated. everted, and involved in the disease, and not, as described in the cases of cystic sarcoma, simply ruptured, the infiltrating tendency of the disease being marked in all its stages, from its first to its last. The intracystic growth will never project, and fungate in the way of sarcomatous growths. Should the nipple be affected by the disease, it may first be as a conduit for the discharge through the milk-ducts, but later on, when the disease has left the cyst and invaded the tissues outside its borders, it will be affected in other ways. When the tumour by its growth has drawn upon the suspensory ligaments of the gland and ducts of the nipple some retraction of the nipple will ensue, and later on, should the nipple itself become materially infiltrated, there may be actual projection. At times there may be such infiltration and contraction of the tissues around the base of the nipple as to produce œdema of it from blood stasis and in rarer cases even sloughing.

The lymphatic glands, axillary or clavicular, will become affected in the cystic form of carcinoma as they are known to be in the non-cystic kind, and they will be affected in the same way. In fact, the progress of a case of cystic carcinoma is similar in kind to that of the more solid form. At the beginning it may possibly be slower, but when the disease has extended beyond the cyst wall or walls I am disposed to think it is often more rapid.—*Guy's Hospital Reports*, 1886, *p.* 441.

[For Mr. Bryant's Treatment of Cystic Tumours of the Breast, see *Synopsis* of this volume of the *Retrospect*.]

5.—ON THE PROGNOSIS OF SECONDARY SYMPTOMS AND CONDITIONS OF EXOPHTHALMIC GOITRE.

By W. Hale White, M.D., Assist. Physician to Guy's Hospital.

I have collected together the following twelve cases of exophthalmic goître, with a view of discovering what becomes of them after they leave the hospital. Wherever possible, I have visited the patients at their own homes; when that has not been possible, I have written to them.

It will be seen that five, of the twelve who have been in the hospital recently, are still alive. Sophie S. is cured of her Graves's disease, but she is hysterical, and says she suffers from gastric ulcer. She will not allow that she is well, so that it is difficult to say when she recovered, but she was certainly ill eight years. Jane A. is quite well, after three years' illness. Ellen H. I have not seen, but she seems well from what I can hear by writing. Alice M. G. is much better, being able to get about her work; but still has all the three cardinal symptoms. Ellen E. is well, excepting for a slight thyroid enlargement. She considers that she has been well

four years, so that the illness would not have lasted more than two. From so few cases, it is difficult to draw any conclusions; but it would appear that, if a case be going to recover, the time in which it will do so averages about four or five years from the onset of symptoms.

Seven of the twelve are dead. Two died suddenly, for which no efficient cause was found on *post-mortem* examination; one died from mitral regurgitation; one from a large axillary abscess, and probable blood-poisoning; one from gastric ulcer; one from consumption; and the friends did not know the cause of death in the seventh. The average duration of life, after the first appearance of symptoms, was $3\frac{2}{3}$ years; but this is probably only partially accurate, as the patients cannot always say when the disease began.

It will thus be seen that exophthalmic goître is by no means a harmless malady; but, of the seven who died, the death can only be attributed to Graves's disease in two—namely, those which died suddenly; for sudden death is always cardiac; and, as the patients had suffered from palpitation, it is only fair to assume that the same cause as set up the palpitation, in some way was the reason of the sudden death. In the mitral regurgitant case, the mitral disease seemed more related to the antecedent rheumatic fever than the exophthalmic goître.

With regard to the treatment, Jane A., who did best of all the cases, had no treatment; Alice M. benefitted considerably from the local application of iced water; Ellen E. was treated with the continuous current, with a good result; Ellen H. did well on iron, digitalis, and belladonna; and Sophie S.'s account of her treatment, after leaving the hospital, is hardly trustworthy. It is noteworthy that the case which died of consumption was, as regards her Graves's disease, much improved by the application of the continuous current. Iron and digitalis are apparently useless, and there is not sufficient evidence to show the value of belladonna; but two of the successful cases took it whilst under treatment by other means, so, perhaps, it had some share in their recovery. The lesson to be learnt from these figures is, that the prognosis of Graves's disease is bad, for the patients are partly liable to death from sudden syncope, and also seem more likely to die from other causes, apparently unconnected with exophthalmic goître; and, of those who do not die, many do not completely lose the disease. The best treatment would appear to be the continuous galvanic current and iced water. It was for this prognosis that I collected the cases; but they may be also utilised to show a few other points.

First, is the great preponderance of females, for there has only been one male case during the whole time we have had the twelve females. As regards neurotic tendencies, some patients are

hysterical, one nervous, and two are liable to neuralgia; in many cases, no doubt, these points were not asked, for it may be taken that the usually stated association with neurotic tendencies is true; four cases, at least, had menstrual irregularities, and one patient stated that the exophthalmos was greater during the periods. The temperature was slightly raised in some cases (it was so in one in which the report does not mention the fact), and the pulse is accelerated out of proportion to the rise of temperature. The palpitation is usually the first symptom to appear (in two cases, it had existed all the patient's life); the enlarged thyroid and exophthalmos come second in order in about equal proportions, the exophthalmos being last rather more frequently than the other; as a rule, all these symptoms come on within a few weeks of each other. The case of Alice M. G. is specially interesting, for I learn that the two sisters referred to also have exophthalmic goître. Although it is not so well brought out as it should be in these abstracts, several of the patients suffer from wasting. In some cases, the eye is painful; but whether that is due to the conjunctivitis, or to the tension of the lids caused by the protrusion, is not stated.

I have grouped all the above facts together, because they are all known to be frequent accompaniments of exophthalmic goître; but the second group of conditions to which I would direct attention is that of the lymphatic system. Four of the twelve cases died within the hospital; one of these four died from heart-disease, and, of the remaining three, all suffered from some affection of the lymphatic system; thus, in Charlotte S., the thymus was persistent, and Peyer's patches were particularly well marked; in Mary M., the thymus was enlarged and persistent, Peyer's patches and the solitary follicles of the whole intestine were much swollen, injected, and very prominent, and the intestine itself was considerably injected; in Eliza T., Peyer's patches at the lower part of the ileum were of a dark livid character, contrasting most strongly with the surrounding intestine, which was injected. Hitherto, sufficient notice has not been taken of this peculiar lymphatic condition and persistent thymus. At present, we know too little of the pathology of Graves's disease to be able to estimate the value of this condition, but as at Guy's Hospital we have often seen it, it would be well if other observers would see if they can confirm or disprove the observation. In connection with this part of the subject, it is to be noted that two patients had enlarged tonsils.

None of the necropsies on exophthalmic goître mentioned here throw any light on the pathology of the disease, but all the evidence that is slowly accumulating is going to show that the lesion is central; this is the more probable, as the disease is often associated with mental disorder. With regard to the changes that

have been stated to be present in the sympathetic system, anyone may easily convince himself that they do not exist solely in exophthalmic goître; for, if the sympathetic be examined in a large number of cases, taken quite irrespectively of the cause of death, these changes will be found more frequently present than absent.

Among my five living cases, not one shows any symptoms of myxœdema or thyroid atrophy; this is important, for it has been suggested that the thyroid atrophy is preceded by hypertrophy; if that be so, exophthalmic goître does not represent the hypertrophic stage.—*British Medical Journal, July* 24, 1886, *p.* 151.

[Detailed accounts of the cases are appended to the paper, but are not reproduced for want of space.]

6.—ON SCARLET FEVER FROM THE COW.

By the Editor of the British Medical Journal.

No more important report has been issued by the Local Government Board for many years, than that presented by Mr. W. H. Power on March 31st, and recently published. The conclusion at which he has arrived is of such far reaching importance, so unexpected, until within the last few months, in its nature, and so disquieting, that the reader is fain to hope that it must be incorrect. Mr. Power, however, leads us on from point to point, until the conviction is forced upon the unwilling reader that it has been proved, as clearly as circumstantial evidence can prove anything, that scarlet fever can be produced by the milk of cows suffering from a disease so slight in its local manifestation as almost to escape attention, and producing so little disturbance of the general health of the cows, that their appetite is not impaired, nor the quantity of milk which they yield diminished.

The first thread in the web of evidence which Mr. Power has woven so skilfully, was afforded by an observation made by Mr. Wynter Blyth, the medical officer of health for St. Marylebone. On December 18th, 1885, he reported to the Local Government Board that an extensive outbreak of scarlet fever in St. Marylebone, appeared to be associated with the distribution of milk by a certain retail milk-dealer, who obtained the greater part of his supply from a dairy farm at Hendon. The next point which Mr. Power ascertained was, that milk from this dairy-farm was sent to three other retail dealers: one at St. John's Wood, another at Hendon, and a third who carried on business at Hampstead and St. Pancras. The epidemic began in St. Marylebone towards the end of November, and, at about the same time, outbreaks of the same disease had occurred among the customers of all the other milk-sellers, except those who dealt with the dairy in St. John's Wood. Moreover, it was ascertained that certain customers of the Marylebone milkman had received milk from Hendon unmixed with milk

from any other farm. Suspicion pointed therefore strongly to the farm at Hendon; but here, for a time, the investigators were at fault, for a thorough examination of the farm and of the labourers employed there failed to reveal any unsanitary conditions; and Dr. Cameron, the medical officer of health, who associated himself with Mr. Power in this stage of the inquiry, was able to affirm positively that there had been no cases of scarlet fever, or any disease remotely resembling it, among the persons working or residing on the farm, and that the few cases which had occurred in the Hendon district during 1885 had been among families residing at a distance from the farm, and in no way connected with it.

At this stage of the inquiry, it became evident that, if the theory which had been started incriminating the Hendon farm was to be maintained, it would be necessary to establish that some new condition affecting the health of the cows had come into operation at, or soon after, the beginning of November. Inquiry elicited that three cows, which had newly calved, had been purchased at Derby market, and admitted to the farm on November 15th. These cows had been kept isolated from the others in a "quarantine shed" until about the end of November, but their milk had, after the first few days, been added to the supply, which eventually found its way to St. Marylebone, Hampstead, and St. Pancras. On December 4th, four other cows, purchased in Oxfordshire, arrived at the farm, and succeeded the Derbyshire cows in the quarantine-shed. The next important part is that after their period of quarantine, the Derbyshire cows were transferred to a shed called the "large shed," where were over forty other cows; the milk from this shed went to the Marylebone dealer, and scarlet fever began among his customers at the end of November, and continued until the supply of milk was stopped. The Oxfordshire cows were kept in quarantine until December 11th, and were then transferred—two to the "large shed," and two to another shed called the "middle shed." The milk from this shed was sent to the dealer who had shops in Hampstead and St. Pancras: the scarlet fever cases occurred among the customers of this dealer in two groups, one at the end of November (the milk from the cows in the quarantine shed had been mixed with this supply shortly before this time), and again, another larger group in the middle of December (that is, soon after the Derbyshire cows had been transferred to the "middle shed" from which the milk for this dealer came). There remained the fact of the entire immunity of the customers of the dealer in St. John's Wood; it turned out that all the milk for this dealer came exclusively from a third shed, called the "small shed," into which no new cows had been introduced. Now comes a most instructive fact, almost of the nature of an exact experiment. A small, limited, but intense outbreak of scarlet fever occurred amongst certain poor families residing at Child's Hill, and at other places

close to the farm; the first case of this group occurred on December 20th. Now, on December 15th, the supply of milk to the St. Marylebone dealer was stopped, and the dairy-farmer gave directions that the whole of the milk from the large shed should be given to the pigs, or thrown into a pit dug for the purpose. Certain poor persons residing in the neighbourhood, hearing of the "waste" of milk, succeeded in obtaining, on December 16th and subsequently, a quantity of milk, surreptitiously, from the cowmen. It was among these people that the outbreak of scarlet fever above mentioned (Child's Hill) occurred on the following week.

The final stage of the inquiry revealed disease among the cows, but so slight that the animals had continued to feed well and to yield their usual quantity of milk; all that could be noticed were vesicles and small ulcers on the udders and teats. On December 31st and following days, a thorough inspection of all the cows was made by Mr. W. H. Power, Dr. Klein, F.R.S., and Dr. Cameron. On two of the Derbyshire cows (November 15th) scars were found on the udders and teats, of a kind that satisfied the observers that they had suffered from the malady; and one of the cowmen subsequently remembered that the first case of sore udder and teats, which he had noticed, was in one of these Derbyshire cows. Further, it was found that on December 31st, two of the Oxfordshire cows had the affection, and that the other cows in the "middle shed" with them had it in an earlier stage; nearly all the cows in the "large shed," where the Derbyshire cows had been stalled, had this vesicular disease of the udder and teats in different stages.

It will be remembered that, among the customers in St. John's Wood who drunk the milk from the "small shed," no cases of scarlet fever had occurred, and that no new cows had been introduced into that shed; but at the inspection on December 31st, two early cases of the disease were detected among the cows in the "small shed;" and corresponding "to a nicety with the appearance, for the first time, of the cow-disease among the animals of the smaller shed," came the report of the cases of scarlet fever among the customers of the dealer in St. John's Wood. Finally, when the supply of milk was completely stopped, then the peculiar incidence of scarlet fever, on the persons who drank the milk from this farm, also ceased.

Though the disease appeared, at first sight, to be purely local in the cow, and though the general symptoms were, undoubtedly, very slight, yet Dr. Klein found reason for regarding it as a general or constitutional disease, and one that might not improbably be communicable from cow to cow. Upon these points, more knowledge is urgently needed, and it is satisfactory to learn that two of the affected cows have been purchased and placed under Dr. Klein's observation in the Brown Institution. His report on the

clinical features and on the pathology of the disease will be awaited with impatience.

Disquieting as are the facts which Mr. Power's inquiry has disclosed, yet it is always better to know our enemy, and even in the facts already made out, there is much that is reassuring. The disease in the cow presents, at least, some very tangible and easily recognised signs; and as soon as the pathology and pathological anatomy have been a little more worked out, veterinary surgeons may be trusted to learn how to make a correct diagnosis, and then prompt isolation may, probably, be trusted to prevent the spread of the disease.—*British Medical Journal, May* 29, 1886, *p.* 1029.

7.—ON THE CONNECTION BETWEEN SCARLET FEVER AND HEART DISEASE.

By Henry Ashby, M.D.Lond., M.R.C.P., Physician to the General Hospital for Sick Children, Manchester.

Scarlet fever has been blamed in a casual and indefinite sort of way with giving rise to heart disease, and it may be worth while for us to review the subject by the light of the clinical and pathological records of nearly 900 cases which have passed through the scarlet fever wards of this hospital during the last five years.

The first question that naturally suggests itself when considering this question is—What relation does rheumatism bear to scarlet fever, or rather what part does the virus of the fever play in exciting or predisposing to an attack of rheumatism? Misconceptions here are very easy, for the commonest form of joint affection which complicates scarlet fever in children is a form of synovitis which is doubtfully rheumatic in character and is not often accompanied by endocarditis. In twenty cases of scarlatinal synovitis which have come under my care, in no one was there evidence of endocarditis, though in one there was a temporary pericarditis and in another pleuro-pericarditis. These attacks differ in several ways from acute or subacute rheumatism; they are more fugitive in character, rarely recurring or returning to a joint when once it has left, and exhibiting an especial tendency to attack the synovial membranes on the backs and palms of the hands, finger-joints, soles of the feet, and cervical vertebræ. The attacks mostly take place from the seventh to the ninth day of the fever. Nearly all these attacks of synovitis occur in cases in which the temperature is maintained longer than usual on account of severe inflammation of the cervical glands or ulceration of the tonsils or palate. These attacks of synovitis are certainly commoner in some epidemics than in others. But, apart from synovitis, attacks indistinguishable from true rheumatism are liable to occur at the end of the third or during the fourth week, much at the time that nephritis is liable to supervene. My own experience is that this post-scarlatinal

rheumatism is commoner in young adults than in children, and indeed I believe it to be rare among the latter. Endocarditis is by no means uncommon in these attacks. It also happens that an attack of scarlet fever occurring in a patient convalescent from rheumatism has given rise to a relapse. I have seen this on several occasions among children who have been admitted to the general wards for subacute rheumatism, and who have contracted scarlet fever. In three of my cases pericarditis or joint pain occurred within a few days of the onset of the fever. In what way the poison of scarlet fever determines a relapse in these cases, I am unable to say; I can only record the fact.

There is another complication of scarlet fever which is, I believe, a not infrequent cause of cardiac lesions, and that is nephritis. Probably a certain amount of dilatation of the left ventricle, with more or less compensatory hypertrophy, occurs in most cases of scarlatinal nephritis of any severity, and may certainly take place within a week, as can be demonstrated by examination of the apex beat. Both endocarditis and pericarditis may take place, and embolism occasionally occurs. Peri-endocarditis may also accompany the pyæmia which occasionally complicates scarlet fever; but as these cases are almost certainly fatal it can hardly be said to produce heart disease. It will, perhaps, be worth while to refer separately to the different lesions which may occur.

Pericarditis.—The tendency to the production of pericarditis in uncomplicated cases of scarlet fever is not great. Litten has stated that dry pericarditis of short duration, without complaint of pain or any very obvious symptoms, is commoner than is supposed; and in this I am inclined to agree with him, as on several occasions I have noted a pericardial rub, lasting a few days and again disappearing without any signs of effusion. In two of my cases of scarlatinal synovitis there was a pericardial rub detected, and in some there was evidently some local pleurisy. In three cases of undoubted rheumatism already referred to, two of which were convalescent from an attack when scarlet fever supervened, suffered from pericarditis within a week of contracting the fever, and all three died in the course of a few weeks. All had suffered from chronic heart disease prior to the attack. Pericarditis also occasionally accompanies both pleurisy and mediastinitis in connection with the septicæmic state so common in severe cases of scarlet fever. Thus it not infrequently happens that, in fatal cases attended with much suppuration of glands and cellulitis about the neck, pus burrows downwards from the deep cervical glands into the anterior mediastinum, and an effusion of lymph takes place in this situation, and possibly also a suppurative pericarditis or empyema. If recovery take place in such cases, this inflammatory process in the mediastinum may lead to matting and cicatrisation

of the fibrous tissue and consequent pressure on the great vessels, especially the inferior vena cava and hepatic veins, giving rise to impeded hepatic circulation and perhaps hypertrophic cirrhosis. Pericarditis occasionally occurs in nephritis.

Endocarditis.—There is very little *post-mortem* evidence of endocarditis occurring in cases of scarlet fever dying during the course of the disease itself. I have examined the heart in upwards of 100 fatal cases of scarlet fever, and have never seen either endocarditis or pericarditis in any case uncomplicated with nephritis. The edges of the mitral valves are mostly irregular and nodular, and more or less thickened, probably in consequence of a swelling of the fibrous tissue elements between the layers of endocardium, but the surface of the latter is smooth and shiny, and has evidently not been the seat of endocarditis. The above condition is by no means uncommon in other febrile states, and is not peculiar to scarlet fever. This experience, I believe, agrees with others, though both Litten and Henoch have published cases in which ulcerative endocarditis was found *post-mortem* associated with caries of the petrous portion of the temporal bone, purulent meningitis, thrombosis of veins, and pyæmic abscesses, complicating scarlet fever. If the *post-mortem* evidence is negative, what facts can be gathered from clinical observations? It must have occurred to all who have seen much of scarlet fever, or indeed of any febrile disease in children, to note murmurs, or at least abnormal cardiac sounds, during the height of the fever, which for the most part are systolic, are heard best in the mitral area, but also at the base, but not in the axilla. The first sound at the apex is frequently elongated, or not so clear and distinct as normal. Some authors have not hesitated to claim these bruits or murmurish first sounds as evidence of a scarlatinal endocarditis. Thus Picot, in the article on Scarlatina in the *Nouveau Dictionnaire de Médecine et Chirurgie*, says, in speaking of endocarditis, "the attacks are light, readily escape observation, and are easily healed." When some years ago I began to constantly examine the hearts of scarlet fever patients, I was struck with the frequency of abnormal heart sounds, and believed at first they were due to endocarditis. But the evidence afforded by the *post-mortem* room, and the careful following up of cases during convalescence, convinced me that the murmurs heard were only functional, and, whatever might be their cause, they were not due to an organic lesion. There are, however, a few cases on record in which the evidence is tolerably strong that endocarditis did occur during the course of, or during convalescence from, an attack of scarlet fever.

I have already referred to the fact that in cases of scarlatinal synovitis, although bruits were heard in several of them, these were only temporary, and afforded no sufficient evidence of endocarditis. Endocarditis does unquestionably occur in the post-

scarlatinal rheumatism, which sometimes supervenes during the third or fourth week of the attack of the fever, and when the patient is fully convalescent. In two cases of malignant endocarditis under the care of my friend, Dr. Massiah, of Didsbury, in which the joint symptoms were slight, but the cardiac severe, which followed during convalescence from scarlet fever, fatal results occurred in the course of four or five weeks. Ulcerative or malignant endocarditis, either with or without joint pain, seems occasionally to follow scarlet fever.

Endocarditis is undoubtedly a not infrequent complication of scarlatinal nephritis. I have noted this post mortem in three cases. In one of my cases an anæmic girl of nine years was admitted with albuminuria and œdema of face, with a history of a previous attack of scarlet fever. There was præcordial pain, dyspnœa, and a loud, almost musical, systolic bruit; there was also an enlarged spleen and intermittent fever. Shortly before her death she suffered from severe pain in the head, paresis of the right arm, optic neuritis, and retinal hemorrhages. At the *post-mortem* the kidneys were enlarged, the cortex pale and fatty; there was extensive endocarditis, the mitral valves and posterior wall of the left auricle being covered with granulations, and a small aneurysm, evidently embolic, on the left middle cerebral artery. In a second case, which died three weeks after the onset of the nephritis, a deep ulcer was found involving one aortic valve; no bruit had been heard during life. In a third case of a girl aged six years, who died three weeks after the onset of the nephritis, both pericarditis and endocarditis, the latter consisting of nodules of fibrin on the aortic valves, were found. A pericardial friction sound, but no distinct murmur, was heard during life. In addition to the *post-mortem* evidence of the existence of endocarditis in scarlatinal nephritis, there is the hardly less convincing evidence afforded by clinical observation, more especially that of the onset of hemiplegia due to embolism coming on during convalescence. Such cases have been recorded by Bristowe, T. Barlow, Semple, and Finlayson. In Semple's case, the hemiplegia seems to have supervened some twelve weeks after the onset of the nephritis, and when the patient had been up and about. It is important to note that murmurs were not to be heard in several of these cases. In several of my cases of nephritis bruits have been detected during life, and endocarditis diagnosed, but no endocarditis found at the *post-mortem* only a dilated left ventricle. In other cases which recovered murmurs were also existent, and which were present when they left the hospital. It is not certain what is the cause of endocarditis in acute nephritis; the uræmic condition of blood seems to predispose to inflammation of serous membranes—as the pleura, pericardium, and peritoneum; and the high tension in the blood-vessels, by bringing about a "banging" action of the valves, would

seem to give rise to a greater irritation of the endocardium than during their normal closure.

Degeneration of the muscular walls.—In most fatal cases of scarlet fever, the muscular walls of the heart are pale and flabby, and the endocardium on the musculi papillares and interior of the ventricles is mottled in appearance, presenting typical "tabby cat" degeneration. The paleness of the walls is due to the presence of minute particles of fatty or granular matters in the muscular fibres, a change very similar to that occurring in all the organs. I have not seen any cases with the indurated or leathery condition of the heart muscle described by Litten.

Dilatation and hypertrophy of the heart without valvular lesions.—In long-continued pyrexias the muscular walls of the heart are apt to be damaged, and the cavities in consequence to become dilated. That this occurs to some extent in scarlet fever is probable, such hearts being found pale and flabby, and the cavities apparently having yielded more or less when contracting on their contents, though I have never seen any marked dilatation or hypertrophy. When, however, in addition to a disturbed nutrition of the muscular fibres, the blood-pressure rises as it does in acute nephritis, there is a frequent and very marked yielding of the walls of the heart, so that the cavities become dilated. As the high tension in the vessels affects all the cavities more or less, they are all found more or less dilated, though naturally the cavity to suffer most is the left ventricle. The amount of hypertrophy which follows depends upon the chronicity of the case and the nutritive powers of the patient. The full significance of this cardiac dilatation and its tendency to produce dyspnœa and sudden death has only been recognised by recent writers, such as Goodhart, Friedländer, and Silbermann. In the most severe cases of nephritis, dilatation may take place very quickly, so that it may be possible in the course of a few days or weeks to see a marked change in the position of the cardiac impulse, the impulse being first noted inside the nipple line, then actually on the line, and later still outside. This dilatation may occur without the presence of a murmur, though in other cases I have noted murmurs when the *post-mortem* showed there was no endocarditis. There can be little doubt that this dilatation occurring during an attack of nephritis may be perfectly recovered from, the cavities returning to their normal size after the nephritis has passed away and the health completely restored. Such cases are far from uncommon, cases being reported by Goodhart, Silbermann, and Baumgarten, and I have myself seen nine or ten, which ended fatally. Various authors have ascribed the symptoms and fatal issue to œdema of the lungs or thrombosis of the pulmonary artery. That general œdema is very often present is certain, but it is not always so, and œdema of the lungs is clearly not the primary cause of the fatal issue, but is the result of the gradually

failing heart. The pathology of such cases is tolerably clear: the nutrition of the heart suffers in consequence of the uræmic and anæmic condition of the blood, while it has to carry on the circulation with an obstruction to the passage of blood through the arterioles of the kidney and elsewhere. The heart is like a badly-fed and over-driven horse, who first staggers under the weight of its load, and then suddenly falls exhausted beneath it.

To sum up the connection of scarlet fever with heart disease, I may submit the following:—1. In uncomplicated cases of scarlet fever, lesions of the heart are very rare. 2. Endocarditis is quite exceptional in scarlatinal synovitis; pericarditis occurs more frequently. 3. Acute or subacute rheumatism occasionally supervenes during convalescence from scarlet fever; an attack of scarlet fever may also be the exciting cause of a relapse; in such attacks peri-endocarditis is frequent. 4. Peri-endocarditis occasionally occurs in scarlatinal pyæmia. 5. Dilatation without valvular disease very frequently occurs in scarlatinal nephritis; peri-endocarditis and embolism are by no means uncommon.—*Lancet, May* 22, 1886, *p.* 961.

8.—ON THE AFFECTIONS OF THE JOINTS, WHICH COMPLICATE OR FOLLOW SCARLET FEVER.

By Henry Ashby, M.D., M.R.C.P., Manchester.

It serves an useful purpose at times to take stock, as it were, of some group of allied diseases, and, while refreshing our memories with the collective wisdom of the past, to compare with it whatever personal knowledge or experience we may have to add to the common store.

With this end in view, I propose considering an important group of complications which are apt to be associated with a disease which has much of interest and importance for every practitioner of medicine. Scarlet fever is truly many-sided, and claims our interest, not only in consequence of its infectious and fatal character, but also on account of the many complications which attend it, and the sequelæ which may supervene when the disease itself has spent its force.

It has been known since the beginning of the century that, in some epidemics of scarlet fever, the joints became affected; but it is only in later times, through the writings of Underwood, Betz, Trousseau, Henoch, and others, that we have any definite information concerning these affections, or any attempt to clear up their pathology.

Trousseau, in his clinical lectures, calls especial attention to what he designates "scarlatinal rheumatism," stating that it occurs much more frequently than is generally believed, and he does not appear to doubt its identity, or at least close relationship with acute

rheumatism, though he notes some of its most important eccentricities. His description has been largely followed in our own text-books, though the accounts given have been meagre ; most writers, like Bristowe, remarking that scarlet fever is at times followed by rheumatism, which does not differ from the ordinary kind, though noting the fact that suppuration occasionally occurs. The opinion that the common form of joint-lesion occurring in scarlet fever is due to the rheumatic diathesis of the patient, rather than to any synovitis produced by the scarlatinal poison, has been commonly held by continental and English writers; and, in a discussion which took place at the annual meeting of the British Medical Association, in Liverpool, in 1883, on "rheumatism in childhood," nearly all the speakers stated their belief that scarlatinal was essentially the same as the ordinary form of rheumatism. In a short paper, which I read on that occasion, I tabulated some cases which had come under my care, and pointed out that they supported the belief that one form at least of the joint-affection is connected rather with a septicæmic than with a rheumatic condition. A further experience has made it clear to me that the difference of opinion which existed on that occasion was due to the fact that the different observers had really been observing different diseases; that, while my cases were all confined to those seen in the fever-ward of a children's hospital, those described by the physicians who took part in the discussion were rather those of adults who had recently recovered from scarlet fever ; the former being septicæmic in nature, the latter being true rheumatism.

It may, perhaps, be worth our while to analyse the various forms of joint-affections which may occur in connection with attacks of scarlet fever. They may be divided thus: 1. Synovitis; 2. Acute or chronic pyæmia ; 3. Acute or subacute rheumatism ; 4. Scrofulous disease of joints.

Synovitis.—Of this form I have notes of twenty cases that have come under my care in the last few years, in which there was a more or less acute inflammation of the joints, and which subsided in a few days without going on to suppuration. It is not easy to say how frequently it occurs, or what percentage of cases of scarlet fever suffer from it, inasmuch as it is much commoner in some epidemics than others. It not unfrequently happens that two of the same family suffer from it ; in four out of my twenty cases, it was followed by nephritis. It is important to notice that it rarely supervenes in mild cases; at least, such is my experience, though true rheumatism does appear often after light attacks. In my own cases, the attacks of fever were certainly severe, the throat-symptoms well marked, and an elevated temperature was maintained beyond the average. In an uncomplicated case of scarlet fever, the temperature goes down towards the end, or at least well within the limits, of the first week, the rash disappearing, and the throat

regaining its natural appearance. Among my own cases, in no one of them did the temperature fall to normal, and remain so during the first week, but the fever continued into the second and third weeks, caused in nearly all instances by the severity of the throat-complications. Thus the tonsils were excavated, or sloughy, the mucous membrane of the nose joined in the inflammatory catarrh, the lymphatic glands were swollen, and often surrounded by cellulitis.

In four of the cases, excluding one who died on the ninth day, the temperature fell to normal within a fortnight; in the remaining fifteen, the febrile symptoms did not abate till the third or fourth week. It thus clearly comes out that the synovitis appertains to those cases in which the symptoms are severe, and the fever unduly prolonged by the ulcerative and sloughy condition of the tonsils and soft palate. Of the twenty cases two were fatal, one on the ninth, and the other on the twenty-fourth day. The joints which were most commonly attacked were the wrists and finger-joints, the inflammation often involving the synovial membranes of the flexor and extensor tendons in the palm and back of the hands. The knees and ankles were frequently involved, and, with the latter, the soles of the feet. The hips and shoulders were less often attacked. In several cases the joints of the cervical vertebræ were affected; movements of the head and neck caused acute pain. For the most part, the joints were painful on movement and tender, less often red and swollen; in most instances the synovitis was fugitive, lasting only a few days, and rarely or never returning to the same joint.

In some few cases the wrist only, or knees only, were affected. In one case the synovitis became chronic in the knees, the effusion lasting for several weeks (sixtieth day), but eventually the fluid was absorbed, and the girl quite recovered. In two other cases the synovitis remained exceptionally long, in one case lasting from the seventh to the twenty-second day, and in another from the eighth to the seventeenth; in five only did the pain and tenderness last beyond the week; in the remainder, the patients were free from pain in two to five days.

In the majority of cases the synovitis supervened at the end of the first week, or beginning of the second; the earliest commencing on the fourth day of the fever, and the latest on the thirteenth, fifteen out of the twenty beginning from the sixth to the ninth day. This knowledge that synovitis nearly always commences at the end of the first or beginning of the second week may be an important element of diagnosis, inasmuch as true rheumatism, when it supervenes, generally does so during convalescence, or, in some cases, at the very commencement of the attack.

The question of cardiac complication is a very important one as bearing upon the rheumatic origin of the synovitis. In seven cases

out of the twenty, soft *bruits* were heard, or the first sound was "murmurish," in one of these with a well marked *bruit* which ended fatally, but no valvular lesion was found. In the greater number of cases the murmurs disappeared before the children left the hospital. It must be borne in mind that *bruits* are often heard in scarlet fever, both at the apex and left base, which disappear completely during convalescence; and I have every reason to believe that those heard in my cases of synovitis were not due to any endocarditis, but were simply hæmic or functional. In one case there was a pericardial friction sound heard, followed by signs of fluid in the pericardial sac, and in another a pleuritic-pericardial rub, as if due to effusion of lymph on the pleura and external surface of the pericardium. In no case, as far as I have been able to ascertain, did chorea follow the attack.

The drug commonly given directly the joints became painful was salicylate of soda. It is difficult to estimate its effects on a disease which is, as a rule, so fugitive as scarlatinal synovitis; and I am inclined to think that, in some cases, where the patient was quickly free from pain, this was only the natural course of events, and was not due to the treatment employed.

It must, I think, be tolerably clear from the foregoing account that there is good reason for classing this joint-affection outside the pale of what is ordinarily termed acute rheumatism. On the other hand, the symptoms point to a condition which may be termed "scarlatinal septicæmia," arising from the absorption of putrid matters from the ulcerative or sloughing process going on in the throat, and resembling the acute or chronic septicæmia in puerperal cases, gonorrhœa, ophthalmia, or diphtheria.

That synovitis differs essentially from rheumatism, may be seen by a consideration of the following points:

1. Synovitis is more common in some epidemics than in others, and occurs more especially in those cases where the febrile stage is prolonged on account of the severity of the throat-affection.

2. The joint-lesions nearly always supervene at a definite stage of the attack, namely, at the end of the first week; a fewer number of joints are affected than in acute rheumatism; the attacks are more fugitive, and rarely recur.

3. Pericarditis and pleurisy are not common, and endocarditis is very rare.

It must appear tolerably certain that, if these attacks were really rheumatic, the scarlatinal poison bringing into activity the latent rheumatism, the frequency of the attacks would not vary with the epidemic, or supervene so constantly at one period, or above all, would so rarely give rise to peri-endocarditis, as it is well known that an attack of acute or subacute rheumatism during childhood only exceptionally spares the heart.

Acute or Chronic Pyæmia.—I have already spoken of scarlatinal septicæmia resulting from the absorption of septic matters from the throat; but, in addition to this condition, there is unquestionably a further stage in which phlebitis, septic embolism of various organs, abscesses in the joints, and purulent inflammation of various serous membranes, take place. Pyæmia is by no means uncommon in scarlet fever, yet it cannot be said that suppurating joints often accur. I have only seen three such cases. In one case, which was fatal on the nineteenth day, there were *ante mortem* clots in the right internal jugular vein, infarcts in the spleen, minute abscesses in the kidneys, and suppuration in both ankle-joints. In a second case, there was suppuration in the distal joint of the thumb, in a boy who died on the fifteenth day. In a third case, in a boy aged $2\frac{1}{2}$ years, in which recovery took place, there was redness and swelling of the finger-joints on the eleventh day; the next day, pain and tenderness in the knee and ankle; on the fifteenth day, two ounces of pus was let out from the knee; and, on the twentieth day, pus was evacuated from the palmar surface of the hand. On the thirty-seventh day, an abscess was opened over the crico-thyroid joint; on the forty-ninth, pus was evacuated fron the hip and also from the popliteal space. The boy finally recovered; and, seven months afterwards, was strong and well. In no one of these cases was there any definite cardiac complication. Similar cases are also related by Henoch and Bokai.

Acute or Subacute Rheumatism.—Whilst, in children, at least, by far the commonest joint-affection in scarlet fever is the synovitis above described, yet it must be admitted that true rheumatism does sometimes complicate scarlet fever, and is apt to follow during convalescence. What part the effects of the scarlet fever poison plays in producing or calling latent rheumatisn into activity, it is difficult to say; it is possible that the tissue-waste leads to an accumulation of effete materials in the system, which, in those prone to rheumatism, brings about an attack. An attack of scarlet fever certainly does seem to stir up an attack, or a recurrence, of joint-pain or periendocarditis. Thus, in four cases which have come under my notice, who had previously suffered from endocarditis and rheumatism, and who contracted fever, the attack was quickly followed by joint-pain, pericarditis, or erythema nodosum. In one case, John M., aged 9, who was admitted on the eighth day of an attack of scarlet fever, a pericardial rub was detected, as well as mitral disease, which latter was evidently old; a few days later, there were joint-pain, and an eruption of erythema circinatum. In another case, M. E. J. B., aged $13\frac{1}{2}$, admitted to the general wards for acute rheumatism and endocarditis, during convalescence, when she had been free from pain for two or three weeks, contracted scarlet fever. On the fifth day, there was a recurrence of

rheumatism in the joints; and on the ninth day pericarditis occurred.

In another case, Eleanor H., aged 5, admitted for mitral disease, having suffered from rheumatism six months before, contracted scarlet fever. There was a pericardial friction-sound heard the same day; and on the fifth day there was an erythematous rash. The association, however, of scarlet fever and acute rheumatism is rather that the latter follows during convalescence, which I am inclined to think it does more commonly in adults that in children. Two cases of this kind, which were under the care of my friend Dr. Massiah, of Didsbury, and which he was good enough to ask me to see, impressed me very much. Two brothers, 8 and 10 years old, suffered from a mild attack of scarlet fever; during the fourth week, when they were up and about in their room, and still desquamating, they began to complain of pain in their joints, which, however, was never severe, and also of pain in the region of the heart, with dyspnœa. Both quickly developed both mitral and aortic *bruits*, and later on pericarditis; one died within three weeks, and the other within five weeks, of the commencement of the rheumatic attack. Both evidently suffered from acute or malignant endocarditis. Such cases are of great importance, and easily mislead, especially as the joint-pains may be comparatively slight.

Scrofulous Disease of Joints.—Disease of the hip, or of other joints, is not, as far as I have seen, a common sequence of scarlet fever; though it is quite possible it may happen oftener than I think, as the cases occurring would gravitate to the surgical side. Presumably, the weakened condition of health produced by the fever, predisposes to tubercular disease of bone or other organs. There can be little doubt that an attack of scarlet fever, as a rule, greatly aggravates chronic disease of joints which have already become established. Suppuration quickly takes place in a perhaps hitherto quiescent hip-joint, and possibly a condition of septicæmia or pyæmia supervenes. It seems probable that sometimes a joint, which has suffered from scarlatinal synovitis, may become the seat of chronic disease, though I cannot say I have ever been certainly able to trace out such a sequence. Much of the variance of opinion with regard to the rheumatic or septicæmic origin of the joint-leisions in scarlet fever has, no doubt, originated from the fact, that observers have been describing the different forms which occur. Personally, I have no doubt that the form which occurs most commonly in children is of septicæmic origin, and rarely leaves behind any damage to the heart; but it is also certain that an attack of scarlet fever will sometimes cause a recrudescence of true rheumatism, or in some way predispose, so that an attack supervenes in the course of the patient's convalescence.—*British Medical Journal, May* 22, 1886, *p.* 970.

9.—ON ABSCESS OF THE SPLEEN IN ENTERIC FEVER.

By R. S. Archer, B.A., M.B., Phys. to the Liverpool Fever Hosp.

On assuming duty at Netherfield Fever Hospital towards the end of last October, I found a boy, aged fourteen years, suffering from what appeared to be an intercurrent relapse or recrudescence of enteric fever. He had been admitted to hospital on Oct. 5th, 1885, under the care of my colleague, Dr. Dunbar, with a history of illness of two days' duration, which commenced with anorexia, vomiting, and rigors. His throat is reported to have been sore, and the tonsils superficially ulcerated. He, as far as I could ascertain, presented none of the common signs or symptoms of enteric fever; in fact, I believe he was sent to hospital as suffering from scarlatina, which was doubtless owing to the slight throat symptoms and a doubtful evanescent red rash. The temperature, which had been febrile since his admission, became normal on Oct. 18th, or about the sixteenth day of apparent illness. It remained normal until the 21st, when it again became febrile, and remained so till the patient's death on Nov. 1st. Oct. 24th was marked by slight pain along the course of the lower ribs on the left side, which was thought might have been due to pericarditis or pleuritis. However, careful examination failed to detect the existence of either of these conditions. On Oct. 26th the left hypochondriac pain became more marked, and on the evening of the following day there was slight general abdominal tenderness. The next twenty-four hours was marked by vomiting, intensification of the abdominal tenderness, and increased tympanitis, especially manifest along the course of the transverse colon. All these signs became more painfully apparent during the next three days, and there was superadded a certain amount of stupor and low muttering delirium. The patient died early on the morning of Nov. 1st apparently from peritonitis, due, as was thought, solely to perforation of the intestine.

At the necropsy (made about ten hours after death) there was fairly marked rigor mortis and considerable emaciation. The abdomen was generally and equally distended, and there was distinct general purulent peritonitis. The omentum and coils of the intestines were loosely held together by layers of yellow puriform lymph. A large quantity of yellow fluid, which had evidently escaped from the intestines, occupied the depending portions of the abdominal and pelvic cavities. The intestines contained some yellow semi-solid fæces. There was a perforation situated about a foot and a half from the ileo-cæcal valve, occupying the base of a cicatrising ulcer. Several of Peyer's patches were observed to be ulcerated, quite free from sloughs, and evidently in process of cicatrisation. The long axis of the ulcers was usually transverse to the course of the intestine, owing, I suppose, to the fact that

cicatrisation had commenced from each end, and not laterally. There was a mass of almost entirely cicatrised ulceration in the neighbourhood of the ileo-cæcal valve. The liver was enlarged and pale. The spleen was enlarged, and generally soft and congested. Its convex surface was covered by a more or less uniform layer of yellow puriform lymph. In its upper part, and under the surface of its external aspect, was an abscess which would contain a large-sized walnut. This collection of pus had ruptured into the peritoneal cavity. The lungs were found to be hypostatically congested, but otherwise healthy. The pericardium contained a considerable quantity of clear, straw-coloured fluid. The heart was healthy.

Remarks.—Abscess of the spleen, a rare affection under all circumstances, would appear to be, contrary to what might be expected when we have regard to the fact that this organ is always affected to a greater or less degree in enteric fever, of very infrequent occurrance in this disease. Murchison's vast experience gives only two cases, both of which died, in what appeared to be a relapse, from general peritonitis, and he mentions five others from other authors. A considerable number of necropsies on the bodies of patients dying of enteric fever at Netherfield Fever Hospital during the last five years supplies only this single example of splenic abscess. In November, 1883, Dr. Coates showed at the Calcutta Medical Society a boy aged four with enlargement of the spleen, the result of malarious fever. An incision was made into an abscess, and about ten ounces of pus discharged. As regards diagnosis, it may be mentioned that in this case the actual condition of affairs, as far as the spleen was concerned, was not determined clinically. But if in another case there were presented for our observation tenderness in the region of the spleen, pain under the left ribs, and a "creeping" peritonitis gradually extending from this as a centre over the abdomen, the existence of splenic abscess would be suggested to the mind; and, further, that the abscess had burst and set up general inflammation of the serous membrane would be quite a reasonable conclusion to arrive at. Although the boy was reported to have been taken ill only two days before admission to hospital, judging from the condition of the ulcers I am strongly inclined to believe he must have been going about with the fever on him for at least a week before the apparent onset of the disease. The reappearance of febrile symptoms after an apyrexial state of three days cannot be regarded as a relapse in the true sense of the word, but must be looked upon rather as symptomatic of the splenic mischief, just as in this disease, as well as in any other of the specific fevers, a continuance of the fever beyond the usual time, or a reappearance of fever, accompanied by manifest local lesions, must be regarded as purely symptomatic.—*Lancet, June* 5, 1886, *p.* 1066.

10.—ON THE DIET TREATMENT OF GOUT.

By John Kent Spender, M.D.Lond., Physician to the Mineral Water Hospital, Bath.

[Dr. Spender's exceedingly interesting paper, from which the following excerpt is taken, is inspired by Ebstein's work on the "Regimen to be adopted in cases of Gout." Ebstein believes that in most cases the gouty process may be developed and continue for a long time without the parenchyma of the kidneys being involved. On the other hand renal inadequacy may be the starting point of gout. The gouty process is briefly defined as "*a limited retention in definite parts of the body of the fluids overladen with uric acid combinations.*"]

Our code of ordinances should begin by acknowledging that although gout is often hereditary, it may be helped or hindered in most cases by careful management of the general health. It is cheering to be able to say that gout may now and then be entirely extinguished.

The first point of importance is a strict limitation in the *quantity* of the food. As Ebstein says, the gouty patient stands in the front rank of those who must cease to eat as soon as the first feeling of satisfaction comes on. The food should be so prepared as to give the stomach as little trouble as possible; and within a definite range, the dietary should vary in quality and mode of cooking. No plan of diet ought to be adopted which causes bodily weakness, as gout is never cured or prevented by starvation.

The breakfast should consist of weak tea with plenty of milk or a little cream, crisp toasted bread, and a fair allowance of butter and cold boiled bacon. Small slices of fried bacon are not injurious, if the lean part be put aside. Eggs are best boiled, rather "underdone," and only the yelk should be eaten. Sugar must be taken very sparingly, as well as all substances which are easily transformed in the system into sugar, as arrowroot, rice, sago, tapioca.

An early dinner is preferable. Mutton, white fish, poultry, and game are usually harmless; nearly every vegetable which is in season may be permitted, if properly dressed; but potatoes only in a small quantity. When the gouty paroxysms are frequent and severe, butchers' meat should be forbidden for several weeks, or even months. Meat which has been twice cooked is always indigestible. Any light pudding of milk, eggs, and flour, may be allowed. Of condiments or "relishes," only that quantity should be taken which is absolutely necessary to make the food palatable. Fresh cherries, strawberries, and grapes are wholesome, and so are baked or stewed apples and pears.

An early evening meal may include cold chicken or a little sweetbread, with cocoatina and milk. Oatmeal porridge makes a

nourishing supper. As a rule, alcohol helps the development of gout; and robust persons with a strong gouty tendency ought to be "total abstainers." But in gout (as in all other diseases) the prescription of alcohol may become a necessity, in order to save a patient from greater evils. A weak person suffering from asthenic gout may be improved in health by a daily ration of mild wine, diluted with an aërated alkaline water. All spirits are dietetic poisons, whether diluted or not. Tobacco-smoking contaminates the blood just when we desire to keep it most pure.

The habits of any one predisposed to gout ought to be simple and active. The "constitutional walk" is a daily duty; and all exercises and sports should be practised which strengthen the muscles and confirm their tone. Nothing is to be done, however, which causes exhaustion or more than a healthy fatigue. The mental powers need occupation and diversion; but evening meetings and amusements must be rare and early. A proper amount of sleep is important. There should be morning bathing in either cold or tepid water, according to weather, age, and resisting power of the system. Turkish baths are sometimes useful. Limbs should be shampooed, and gouty joints manipulated. Woollen clothing ought to be worn all the year; and with well-fitting shoes and woollen stockings the feet can be kept always dry and warm.

Mineral waters stand in a sort of intermediate position between diet and medicine. The internal use of hot mineral waters may be called *thermal food*, if guided by tact and experience. This is not the place to discuss the external and internal application of the Bath thermal waters; but no one can doubt their great usefulness in proper cases of chronic gout.—*Practitioner, May*, 1886, *p.* 346.

11.—ON THE USE OF SALICYLIC ACID IN GOUT AND RHEUMATISM.

By P. W. Latham, M.D., F.R.C.P., Downing Prof. of Medicine, Cambridge; Senior Physician to Addenbrooke's Hospital.

In gout, uncomplicated with contracted kidney or albuminuria, salicylic acid is often of service. But it is in acute rheumatism that it shows its special power, acting truly, when properly administered, as a distinct specific. Here is a disorder which under different treatment may exist for weeks stationary, so to speak, in its intensity, the great heat, and nervous and vascular excitement, and pain, and swelling being exactly of the same amount to-day as they were weeks ago; a disorder which less than fifty years since was said to be "often such in itself and such in its appalling incidents as to need from time to time that medicine should put forth the full compass of all its powers. Every organ or system of organs which either directly or indirectly can receive the im-

pression of remedies are from time to time called to bear all that they can possibly endure; and it is often only when the powers of medicine are pressed even to the verge of destroying life, that life is saved." And now, with or without the administration of a purgative, as the occasion requires, the patient is placed fully under the influence of salicylic acid, and in from forty to sixty hours, not unfrequently in a shorter time, the pains in the joints have subsided, the limbs can be freely moved, and the bodily temperature has reached the normal condition. But more than this—and here the remedy shows its signal power,—in no case of rheumatism that has come under my care during the last six years, either in hospital or private practice, has there been, where the heart was previously sound, any cardiac complication, such as endocarditis or pericarditis, developed. If this can be maintained and ensured, we have indeed in our hands a most potent remedy. Cardiac complications constitute the chief danger of acute rheumatism, and the danger, if the disease be taken in hand soon enough, may with our new remedy be averted. But certain conditions must be observed to ensure success in the administration of the remedy. They are as follows:—1. The true salicylic acid obtained from the vegetable kingdom must alone be employed. If you have to give large doses, avoid giving the artificial product obtained from carbolic acid, however much it may have been dialysed and purified. An impure acid will very quickly produce symptoms closely resembling delirium tremens. 2. Give the acid without any alkali or base. A very good form is to mix 100 grains with 15 grains of acacia powder and a little mucilage. Allow the mass to stand and harden, and then divide into thirty pills. 3. Place the patient fully under the influence of the drug—that is, let him have sufficient to produce cerebral disturbance—*i.e.*, buzzing in the ears or headache, or slight deafness; with the development of these symptoms the temperature and the pains in the joints will begin to decline. To an adult I generally administer three doses of 20 grains (six pills) at intervals of an hour, and if the head remains unaffected, a fourth dose at the end of another hour; and then repeat the 20 grains every four hours until the physiological effect of the remedy shows itself. In the majority of cases from 80 to 100 grains are enough. In severe cases 140 to 150 grains may be required. Afterwards about 80 grains a day are sufficient, and as the temperature declines smaller quantities will develop their physiological effects, 60 or even 50 grains being then sufficient to produce cerebral disturbance. It would appear that as long as the rheumatic poison is circulating in the system, the physiological effect—that is, the effect it produces in the healthy organism—does not show itself; acting as an antidote, the greater the amount of poison the larger must be the dose of the remedy; but as soon as the formation of the *materies morbi* is stopped, then the excess of the remedy acts as it would in the

healthy organism and its peculiar physiological effects are developed. It is a very striking illustration of the difference between the therapeutic effect of a remedy and its physiological action. 4. Give the patient from 40 to 80 grains daily for ten days after all pain and pyrexia have passed away. 5. Let the patient's diet consist entirely of milk and farinaceous food for at least a week after the evening temperature has been normal. On the other hand, if the patient has meat and soup, you may look forward with fair probability to a relapse. 6. Take care to maintain a daily and complete action of the bowels. Calomel is the best purgative, from 2 to 5 grains at night, followed in the morning, if necessary, with a saline draught. This is the most important adjuvant to the action of salicylic acid, and I will presently explain to you why this is the case. 7. Let the patient be enveloped in a light blanket, and with no more bedclothes than are sufficient to keep him from feeling cold. The object of the treatment now is to cool the patient—not, as in former times, to sweat the poison out of him; and the cooler he is kept the sooner will the temperature be lowered. In fever increased heat increases the metabolism just as in a cold-blooded animal.

These are the seven rules upon which I act. I have given the true salicylic acid where there have been both aortic and mitral mischief; and I have also given it in rheumatism complicated with pericarditis, and as yet I have seen no bad result from it. Of course in cases of pericarditis, accompanied with delirium, the use of the remedy requires caution; you cannot tell when the system is saturated with the remedy, and you must therefore trust to smaller doses and other means for controlling the disease. Further, if pericarditis or endocarditis, pneumonia, or pleurisy have been developed, the remedy is powerless over the mischief which is done; it will neutralise the poison producing the mischief so as to stop its extension, but the inflammatory exudations will undergo their usual changes unabbreviated in their course. We see the same thing in tonsillitis. Given early enough, salicylic acid will stop the mischief, but if exudation of lymph has taken place salicylic acid is powerless to cause its absorption.

I have referred to the necessity of keeping up daily and sufficient action of the bowels. The benefits resulting generally, in rheumatism, from the so-called purgative plan of treatment have always been recognised by the older physicians as striking and satisfactory. By the judicious use of cholagogue purgatives we eliminate the bile from the intestines and so remove from the system a quantity of glycocine, which if re-absorbed would lead to the consequent formation of uric acid. Calomel is unquestionably of service here. Doubts may exist as to whether it promotes the flow of bile from the liver or not; but when the bile gets into the intestine calomel will cause its evacuation. "The conclusion seems

inevitable that mercurial purgatives given to healthy persons cause the escape of large quantities of bile from the alimentary canal." Referring to the three modes of treatment—by venesection, by opium, and by purgatives—which were in vogue at the time, Dr. P. M. Latham says with regard to the last: "As this plan of treatment works prosperously day after day in its immediate effects, so day after day it gives an earnest of the remedial impression it is exercising upon the whole disease. It abates the fever, it softens the pulse, it reduces the swelling, and it lessens the pain. In short, it subdues the vascular system like a bleeding, and pacifies the nervous system like an opiate; and often in the course of a week the acute rheumatism is gone. In three days there is often a signal mitigation of all the symptoms; and in a week I have often seen patients, who have been carried helpless into the hospital, and shrieking at the least jar or touch or movement of their limbs, risen from their beds, and walking about the ward quite free from pain. Of this plan, often so striking in its operation, and often so satisfactory in its results, I have some further remarks to make. It is called the purgative plan; yet its purpose is achieved by calomel and purgatives conjointly. The purgatives would not answer the end without the calomel—of that I am quite certain; neither would the calomel answer without the purgatives, unless it produced of itself ample evacuations from the bowels. It is probable, in short, that the remedial efficacy of the plan resides essentially in the calomel; in calomel, however, not as *mercury*, but as itself—*calomel*. If the specific effect of mercury—salivation—arise, it is not only beside our purpose and against our wish, but it begets a serious hindrance to the use of calomel in sufficient quantity for the end in view. Thus the whole plan is frustrated. Having begun one plan of treatment, we are obliged to take up with another. Time is lost, the case is perplexed, the disease is prolonged, and the patient perhaps injured. ....Now, if in the treatment of acute rheumatism you were to choose one indication and abide by it, and were to trust one class of remedies and to it only, you would find more cases that admit of a readier cure by the method now described than by either of the former two. You would find the aggregate of morbid actions and sufferings, which constitute the disease, more surely reached and counteracted and more quickly abolished by medicines operating upon the abdominal viscera only than by those which influence either the bloodvessels only or the nerves only. You would find in calomel and purgatives a better remedy than in either venesection or in opium."

In the earlier attacks of gout, too, I have often seen marked relief follow the administration of calomel and a saline cathartic. Where there is high arterial tension, as in the gouty paroxysm, this may be distinctly lowered by these remedies. They check the further formation of uric acid which is stimulating the vaso-motor

centre and causing the increased arterial tension, by eliminating the bile from the intestines. In some persons calomel has a depressing effect, and when the kidneys are unsound is injurious in its action. Where calomel is inadmissible, a gentle laxative, such as rhubarb is often of service. When the object is simply to unload the bowels in a debilitated subject, it is the best purgative. It is said to act chiefly by increasing the peristaltic action of the bowels throughout their entire extent, but especially that of the duodenum. According to Rutherford, it is a cholagogue. Sir Henry Halford recommended it as a prophylactic remedy against gout: a few grains of rhubarb with double the quantity of magnesia every day; or some light bitter infusion with tincture of rhubarb and about fifteen grains of bicarbonate of potash. The saline cathartics probably act only by causing serious evacuations, and in that way carry off from the blood some of the poison contained in it. They may also act beneficially, perhaps, by relieving a congested liver.—*Croonian Lectures—Lancet, May* 1, 1886, *p.* 818.

12.—ON RHEUMATISM IN CHILDREN.

By Angel Money, M.D., M.R.C.P., Assistant Physician to the Great Ormond Street Hospital for Sick Children, London.

The lecturer opined that it was legitimate to speak of a children's type of rheumatism. A typical case of rheumatism in a child might be pictured as one that presented in the course of a single attack of the malady the following phenomena: erythemata, nodules of the subcutaneous variety, now so well known, joint affection, endocarditis, and chorea. Dr. Money said that he had seen all these phenomena occur in the course of a single attack of rheumatism in a child. Briefly put, the children's rheumatism might be said to be characterised by the frequency of occurrence of erythemata, nodules, endocarditis, and chorea, and by the slightness of the arthritis and pain, pyrexia and sweating. He also advanced the view that arthritis was even of very doubtful occurrence, and considered that the slight effusions about joints met with in the rheumatism of children ought to be regarded as of the nature of a peri-arthritis, the slight spontaneous pain and not great tenderness certainly not militating against such a view. He was of Dr. T. Barlow's opinion, that effusion into the sheaths of tendons was decidedly a feature of the rheumatism of children. The subcutaneous nodules were regarded as of the first importance in the study of the affection in childhood. Accepting Dr. Barlow's homology between them and the bases of valvular vegetations, he thought we might consider that the changes in the one were in some sense representative of the alterations in the other. It was reasonable to suppose that, so long as the nodules came and went, similar alterations might be taking place in the valvular lesions.

He still adhered to his opinion expressed three years ago, that in half the cases of severe rheumatic heart disease in children nodules might be found. The greater frequency of endocarditis in children might be partially accounted for by the slight painfulness of the arthritic manifestations, which did not prevent children suffering from a moderate degree of rheumatism from running about; mechanical strain probably thus played an important part in exciting the "nodular" valvulitis. It was by no means rare to find disease of the valves of the right side of the heart in rheumatic children. In rheumatism, chorea must be regarded, like the nodules, as a symptom, an expression of the disease. Although chorea, that attracted attention, was by no means a universal symptom of rheumatism in children, still it was remarkable, Dr. Money said, in his experience, how very frequently a slight amount of involuntary twitching of the fingers was present. Erythemata were probably even more frequently present than observed, for they were sometimes so fugacious as to be easily missed. Stiff-neck and back-ache were probably affections of the interstitial connective tissue of muscle, and not an affection of the muscular protoplasm proper. He had seen rheumatic nodules develop around a joint which at the time showed decided signs of effusion of the kind usually seen in children.

If we contemplated the course of the various rheumatic phenomena, it would be observed that they all tended to come and go, and in this respect they exhibited a series of degrees of duration beginning with erythemata, which were the least durable, passing on to periarthritis, teno-synovitis, nodules, chorea, and endocarditis. Doubtless, no absolute rule could be laid down in this regard, but the comparison was worthy of entertainment. Was there a single essential lesion in rheumatism? Might we look upon the various rheumatic phenomena as of equivalent order? The cause of rheumatism, whatever it might be, was liable to produce slight localised inflammations, having a remarkable tendency to subside. It was possible that an erythema might be regarded as the essential semeiological rheumatic element. In the skin such a lesion could easily pass away; in subcutaneous tissues its effects might be more marked and more lasting, though still tending to disappear; so with the heart. Could we regard the chorea of rheumatism as the result of multiple erythemata of some part of the motor apparatus of the brain and spinal cord? It was curious that so many of the rheumatic lesions had been ascribed to embolism; it would be easy enough to regard the papular and marginal forms of erythema as due to trifling multiple embolism, just as the purpura had been so explained; likewise the migratory joint affection, as Hueter held; and why not the nodules as well as the chorea? But embolism could hardly explain the nodular valvulitis or beading of valves; nor probably the

tendency that sometimes existed for pericarditis to assume a nodular form, as both Dr. Barlow and Dr. Money had actually found at the necropsy of cases of rheumatic disease in children.

In conclusion, Dr. Money considered that the rheumatism of children was one of the most hopeful affections that the medical man could have to treat, provided that the diagnosis be made at an early stage of its development—a very large proviso. But the affection might be easily overlooked on account of the slightness of the subjective symptoms. How important was it that a most careful physical examination should be made in all cases of even slight ailments! Some of the rheumatism of children was so insidious in its operation, that it was conceivable for the disease to be at work without giving signs either of a subjective or an objective order.

A child who has any sign of rheumatism about it should be kept absolutely all day and night in bed. Even if a mere urticaria or erythema be the only sign to be found, the bed should be tried for a day or two and the case watched for other members of the rheumatic series. Whilst holding that erythemata, the nodules, periarthritis, chorea, and heart disease were perhaps most frequently of rheumatic origin in children, Dr. Money allowed fully that any of these symptoms might own several other causes. Not all erythemata and chorea are rheumatic, nor is all periarthritis and endocarditis of rheumatic origin.

The severity of rheumatism in children may be measured by the appearance and clinical development of the nodules. The nodules, both of the subcutaneous tissue and the valves of the heart, are a guide to the degree of rheumatism and to its character. Some kinds of rheumatism resemble the shocks of the interrupted current, and others have more of the continuous character, smouldering in its manner. Dr. Money had seen abundant crops of nodules, with signs of genuine heart disease, come with the suddenness of a flight of birds, and disappear almost in the same rapid but in a more straggling manner; and these severe attacks may be repeated, leaving the patient somewhat devitalised, yet with prospects of a complete restoration to health. It was quite another thing in the rheumatism that was less intense but more continuous; this was the variety which Dr. Money believed led to further fibrotic changes in the valves, and sometimes in cases of this slowly progressive course the nodules abated some of their tendency to disappear, and remained for weeks and months together. No doubt intermediate stages between these two forms existed.

As to the further treatment of rheumatism, the principles were of the simplest order, but at the bedside many details had to be borne in mind and must be acquired by the practitioner himself, for no amount of lecturing could impart the necessities of treat-

ment of any individual case. Dr. Money had faith in the employment of moderate quantities of bland fluids like barley-water or toast-and-water, to which might be added the alkaline carbonates, the effects of which were probably, he suggested, enhanced by their administration in dilute form. Salicylate of soda or salicine was of value in some cases of rheumatism in children, but in his experience of less value than in adults, whose pain and joint affection were so much more a part of their suffering.

Some of the most disheartening cases that could fall to the lot of the medical practitioner were those which presented a picture of pallid cachexia simulating the appearance of a neglected case of empyema. Here the child may be breathing rapidly, with a dry skin and clubbed fingers; with severe heart disease manifested in the rapid heaving action, loud murmurs, and thrills; with bronchitis, worse in the left lung, and even with patches of pleurisy about the bases of the lungs and elsewhere; with nodules about the ankles and elbows, considerable emaciation, and an almost undiscoverable effusion about two or three joints; and yet with a temperature that does not transcend 101° in the course of the twenty-four hours, and which may for a greater part of the time be not above 99° or even the normal.—*Lancet, July* 24, *p.* 158.

13.—ON DIPHTHERIA IN A COUNTRY PRACTICE.

By Edward Penny, M.D., Med. Officer to Marlborough College.

I should like to state the results of my experience of diphtheria, as seen in a country practice during the past two years. In this period of time I have had fully 150 cases of sore throat, to which I venture to attach the specific name. Out of this number five died, three from extension of membrane to the larynx, and two from cardiac failure and vomiting; while in two other cases of laryngitis, ending fatally, I believe no membrane was present, though in the absence of *post-mortem* examination I cannot be quite certain. But the point to which I wish specially to draw attention, is that the large majority of the cases were exceedingly mild, the patients perhaps feeling ill for a day or two, often scarcely complaining of sore throat at all, and in many instances refusing even to keep at home. I have sometimes seen, on the first day of illness being felt, a small patch of membrane on the tonsil, while on the following day there would be present only a shallow excoriation where the membrane had existed, and on the next day again even this had disappeared, and the surface appeared smooth and even. Usually, however, a considerable part of the tonsil would be affected, and the membrane would adhere longer; while, in one severe case, patches were still present, after three weeks' illness. In nearly all, the membrane was confined to the tonsils, but in a few the discharge of clear or blood-stained fluid from the nose

showed that the nasal cavities were affected, and in one a patch of membrane was seen on the margin of the anterior nasal orifice. In two or three severe cases the soft palate and pharynx were thickly coated, and in the three fatal cases mentioned above, the larynx became involved. Often in the convalescent stage the tonsils remained enlarged (as Dr. Gresswell has remarked) and in the crypts would lurk remnants of membrane, giving an aspect closely resembling follicular tonsillitis. Indeed, in some cases I do not think it is possible to make a distinguishing diagnosis between the two diseases, when the throats are seen for the first time at this stage. Another error easily made in such patients, is to overlook the presence of the membrane altogether, for the swollen tonsil may completely hide the fragments of the membrane in the crypts, when the throat is viewed in the ordinary manner; but if the spoon-handle be passed into the fauces, and the action of retching induced, the tonsil seems to start forward and open out as it were, disclosing the patches of membrane still lurking in its recesses.

The disease was chiefly found in the young; and, in the fatal cases, the age varied from two to five years. It appeared in the better-class cottages, as well as in the miserably dirty ones; in isolated houses as well as in those grouped together. Generally, no history of contagion could be obtained; but in some cases, it could be clearly traced. In three families, every child was attacked, only excepting the baby in each.

As regards recurrence, one of the fatal cases had had a well marked attack five months before, and in another decided case, there had been an equally well marked attack six months previously. The household, of which the last mentioned case was a member, figures largely in my note book; for, out of its eleven people, no fewer than eight have had "sore-throat" during the past two years; in some, when examined, membrane was present, in others not. Again, one of the eight has been under treatment four times, though no membrane was visible at any time when I examined her. These instances become of great interest when considered with reference to Dr. Astley Gresswell's paper on the chronic and recrudescent form of the disease, recently read before the Epidemiological Society.

With regard to albuminuria, in the few instances of slight attacks in which I tested the urine, I failed to find albumen, but, in the severe cases, it was usually present.

The sequelæ noticed were very few, for in only two cases was there paralysis of the soft palate (accompanied by oculo-motor paralysis), and in one or two other cases prolonged general weakness.

The district was a country one, though well populated, and the subsoil a heavy clay. No particular relation to weather or season could be detected. I may add that, at times, there occurred numerous cases of ulceration of the mouth in children

the mucous-membrane of the cheeks opposite the basis of the tooth-crowns being the part usually affected. Once or twice I have seen a similar ulceration of the vulva. I was unable to establish any direct relation between these cases and those described as diphtheria, but they occurred sometimes in houses afterwards affected by diphtheria, and in some cases, at all events, appeared to be contagious, and to give rise to a similar attack in others.—*British Medical Journal, July* 3, 1886, *p.* 15.

DISEASES OF THE NERVOUS SYSTEM.

14.—ON ATAXIC PARAPLEGIA.

By W. R. Gowers, M.D., F.R.C.P., Assistant Professor of Clinical Medicine in University College.

[Under the above title, Dr. Gowers calls attention to a condition comparatively common, but hitherto little noticed in medical literature. The author's remarks are published in the form of a clinical lecture, taking for examples two cases—one in a woman, the other in a man. The disease, it appears, occurs in both sexes, but is more frequent in men than in women. It is as rare to have a history of constitutional syphilis in the subjects of ataxic paraplegia as it is common to have such a history in the subjects of pure locomotor ataxy. Among exciting causes, exposure to cold, mental distress, and concussion of the spine are mentioned. In many cases no cause can be traced. In all the fatal cases examined, the spinal cord has presented sclerosis of both posterior and lateral columns, but the precise extent and degree of the degeneration seem subject to considerable variations. The treatment is, in the main, that common to all chronic diseases of the spinal cord, and unsatisfactory in its results. Dr. Gowers recommends prolonged rest, avoidance of all supposed causes, the administration of small doses of mercury, and of arsenic. In the majority of cases, the progressive tendency of the disease baffles all attempts to check it. We reproduce verbatim that portion of Dr. Gowers's very interesting lecture which treats directly of the clinical manifestations of the disorder.]

The onset of the symptoms is always gradual, and their progress is commonly slow. Even when it is steadily progressive, at no time stationary, years may pass before the power of walking is lost. This man can still walk, although with difficulty, and it is now eleven years since he could last say that he was well. The woman's symptoms commenced seven years ago, but it was only at Christmas last that she took to her bed. In very rare cases the onset has been less chronic, almost subacute, and the symptoms have attained a considerable degree of intensity in a few months. The first manifestation of the disease in almost all cases is in the

legs, and the symptoms may remain limited to them throughout, or may afterwards invade the arms in various degrees. The characteristic feature of the disease is a slow and simultaneous development of two symptoms—defect of power and defect of coördination, weakness and ataxy. The patient at first finds that he tires more readily than before; he is glad to ride distances which before it was a pleasure to him to walk. The clinical clerk who took this man's history has recognised the fact by noting as the earliest symptoms "a tendency to frequent use of twopenny 'busses." As soon as the patient is conscious of weakness, he is conscious also of some unsteadiness. He notices it when he turns suddenly, when he walks in the dark or on an uneven pavement, or when. in order to wash his face, he shuts his eyes and bends forward. There are no pains in the legs. They may ache a little after walking, but there are scarcely ever the sharp pains which, as you know, are so common in tabes. There is sometimes a little dull pain in the back, and not unfrequently there is a good deal of aching pain in the sacral region, but that is all. The motor symptoms slowly increase. If you then see the patient, you will find distinct loss of power in the legs. You may, indeed, not discover it at first, for the patient as he sits may extend his legs with force; but if you carefully examine, as you should do, the power of each set of muscles, you will find that the flexors are distinctly weak, the flexors of the hip especially, the flexors of the knee in less degree. The fact of the defect is often, as it were, emphasised by being greater in one leg than in the other. But if you have often to search for the weakness, it is not so with the incöordination which usually obtrudes itself upon your notice. The patient's gait is distinctly unsteady; if he turns quickly he reels, and has to bring his foot suddenly to the ground to maintain his equilibrium and to save himself from falling. It may be impossible for him to stand with his feet together and eyes closed, and even with open eyes he oscillates, and the irregularity of the muscular contractions is shown, if the feet are bare, by the quick movement of the tendons on the dorsum of the foot. The incöordination may resemble perfectly that of many cases of tabes, although there is not the "high action" of the legs sometimes present in the latter disease. I have admitted this man into the hospital as an illustrative case, because he has been under my observation for many years, and I have been able to watch the slow course of his symptoms. It is now eight years since I first saw him, and at that time his gait was exactly like that of most tabetic patients. I remember often asking a student from what the man appeared to be suffering, and the answer always was "locomotor ataxy." This ataxy is not confined to locomotion. It is equally evident in the irregular movement of the leg, if, as the patient lies, he attempts to touch some object when his eyes are closed. If you should come to the con-

clusion that such a patient is suffering from locomotor ataxy, and proceed to confirm your diagnosis by testing the knee-jerk, you will discover at once the anomalous feature of the case. Instead of being lost, the knee-jerk is increased, and you are able without difficulty to obtain a foot clonus. Indeed, you can often obtain also a rectus clonus by suddenly depressing the patella, as the patient lies, and thus extending the rectus—always a proof of a great excess of the peculiar "myotatic" irritability on which these phenomena depend. You can obtain, as you see, both rectus and foot clonus in each of the patients before you. Thus, an increase of this irritability attends, in this disease, as it so often does, weakness of the legs, and it attends the weakness in spite of the existence of a symptom commonly associated with entire loss of these phenomena.

I told you that lightning pains are absent. I have, indeed, met with them in one case, but they were transient and ceased after a few months, not again to return. In harmony with the absence of these pains is the general integrity of sensation, which is not impaired upon either limbs or trunk. Sometimes the patient complains of subjective feelings of "numbness" or "tingling" in the extremities, but there is no corresponding loss of sensation, or only a very slight and doubtful impairment of tactile sensibility on the fingers and toes, scarcely ever amounting to actual loss. Here, again, is another marked difference from tabes. Reflex action from the sole is also perfect and is commonly excessive. The arms are often free, but they sometimes present symptoms similar to those of the legs—incöordination of movement of the fingers, weakness, and increased myotatic irritability. Often, indeed, there is this increased irritability when the patient is conscious of no weakness, but you will then find, if you test power, that it is below the average. If the arms suffer, one is often affected in greater degree. In this woman there is very marked incöordination of movement of the right hand, and none of the left. In the man there is some incöordination of both hands. Sexual power is often lost early in the disease. The sphincters are frequently impaired, sometimes early, but the impairment rarely reaches a considerable degree. In the woman, when first admitted, there was well-marked reflex incontinence of urine. There was no persistent dribbling and no persistent distension of the bladder, but as soon as a certain quantity of urine had accumulated in it, the bladder was emptied involuntarily. The iris usually acts to light. It does so perfectly in each of the patients before you. I have seen loss of the light-reflex in two or three cases, and have once known accommodation to be lost, the action to light being normal. Optic nerve atrophy occurs only in very rare cases, less frequently than in tabes; I have seen one case in which there were indications of a retro-ocular axial neuritis. The external ocular muscles are

usually normal, and there is no nystagmus. Slight impairment of articulation is not uncommon; sometimes there are irregular tremulous movements of the face resembling those of general paralysis, and this in cases in which there is no mental change. Westphal has observed marked ataxy of the facial muscles. As a rule, the mental state is either normal or there is merely slight failure of memory. Undue frequency of the pulse is occasionally present, but is less common than in tabes.

As the disease increases the muscular power becomes more and more impaired, usually without much increase in the incöordination, which sinks into the background as the paralysis increases, and the patient has to have recourse to supports, which at the same time afford him guidance. The increased myotatic irritability continues; stiffness and rigidity develop as its consequence. Thus the aspect of the patient comes to be that of spastic paraplegia, the feet drag as the patient walks, shake from clonus when he stops, and the legs are hauled forwards with visible effort at each step. Indications of unsteadiness may still be observed in isolated movements. In spite of the progress of the weakness, sensation usually continues normal. There is no loss to pain or to temperature, and there is no absolute loss of tactile sensibility. The arms, if previously free, may suffer in the later stage of the disease, or they may remain throughout free from any symptoms of palsy or incöordination. Often there is slight ataxy in the arms, but no considerable impairment of power, even in the later stage of the disease. The reflex action of the pupils, unless early lost, continues normal throughout. There is, as a rule, no wasting of the muscles and no change in their electrical excitability. The symptoms present, in some cases, variations from this type. Sensation in the legs may be impaired and the knee-jerk may be lost. These cases are intermediate between the form now under consideration and pure tabes; they are, however, very rare, and do not constitute more than 5 per cent. of the cases in which ataxy and weakness come on together.

The disease has little tendency to cause death; indeed, the fatal cases have, for the most part, been untypical, and do not convey an accurate idea of the characters of the disease. The chief danger to life is from the accidents common to all chronic spinal affections, and especially from kidney disease secondary to retention. Among complications, the most important are mental changes resembling those of general paralysis of the insane, of which, indeed, this combined sclerosis may form part. Slight muscular atrophy sometimes occurs. Arthritis of doubtful significance has been once observed. A patient of Westphal's, who presented derangement of the sympathetic, died from peculiar spasm of the muscles of respiration. Visceral crises, however, are practically unknown.—*Lancet, July* 3, 1886, *p.* 1.

15.—ON ALCOHOLIC PARALYSIS.

By Robert Saundby, M.D.Edin., M.R.C.P.Lond.
Physician to the General Hospital, Birmingham.

[Dr. Saundby's clinical lecture, of which we give the latter part only, is based upon an interesting example of alcoholic paraplegia. The case departed somewhat from the ordinary lines of alcoholic paralysis, there being a spastic condition of the affected limbs.]

Alcoholic paralysis occurs chiefly, but not always, in females, and according to Charcot (though I think this is doubtful) only in those with neuropathic tendencies—of course, too, only in those who indulge in immoderate and prolonged abuse of alcohol. Its onset is gradual, commencing with pains in the legs and some loss of power. The patient walks with uncertain gait, using a stick or helping herself by the furniture, and in this stage there is a strong resemblance to locomotor ataxy, which is strengthened by the loss of tendon reflexes. There is usually some anæsthesia or hyperæsthesia, and a very marked symptom is *the hyperæsthesia of the muscular masses.* The paralysis affects chiefly the extensors, and is followed by wasting and loss of electrical contractility, with, we are told, perversion of the normal galvanic excitability, the anodal stimulus equalling or exceeding that of the kathode. Vaso-motor disturbances, œdema, cutaneous eruptions, and sensations of heat or cold are often present in the affected limbs. The upper extremities may be attacked, the earlier signs being numbness and a tendency to drop-wrist. The researches of Déjérine and Moeli have proved that the brain and spinal cord are intact, the lesion being seated in the peripheral nerves. Up to quite recently this lesion was said to be what is called Wallerian degeneration, named after a former distinguished teacher of this school. It is identical with the changes seen in the peripheral part of a nerve two months after it has been divided. These are disappearance of the axis cylinders and breaking up of the myelin or medullary sheath, which runs together to form globules, the outline of the nerve tubes becoming irregular or moniliform. Recently M. Gombault has described the primary lesion of the nerve as an inflammation of the myelin, which becomes granular with its nuclei increased, while the axis cylinder remains intact. To this lesion he gives the name of "periaxial segmentary neuritis." The Wallerian degeneration occurs as a result of this lesion.

It will be at once admitted that our case presents in most particulars a striking resemblance to this description. But there are three points in which it does not altogether conform, and I must not omit to point these out to you. You will recollect that our patient ascribes her illness to a chill caught while bathing. I do not think we can accept this statement as complete evidence, but it must go for what it is worth. In the second place, she

speaks of the shock as occurring suddenly, and though Mr. Proffitt's account shows that the loss of power was gradual, yet she fixes a very precise date to the occurrence of the first symptoms in a manner that does not agree with the usual mode of onset as described by writers on alcoholic paralysis. Lastly, we have contractures and rigidity of the knees and ankles. It is admitted by some writers that contractures may occur, but they are very exceptional, and, as a general rule, their presence should make you hesitate to accept a diagnosis of peripheral paralysis.

All modern writers speak of the reaction of degeneration as present. By this they mean that the contraction obtained on stimulating the muscle with the galvanic current is greater on anodal (positive pole) than on kathodal (negative pole) closure, or, as they express it, A.C.C. is greater than K.C.C. I tested this point very carefully, and found that, while galvanic excitability was certainly diminished, no qualitative change existed; and I would take this opportunity of telling you that in my experience this much-talked-of sign is neither certain nor trustworthy. The great pain complained of from the use of the galvanic current was probably due to the hyperæsthesia of the muscles giving rise to painful spasms when contracting; the faradaic current, which is ordinarily much more painful, failing to excite the muscles at all, caused no complaint.

After duly weighing all the evidence, and allowing full consideration to the facts just stated, I have concluded that a diagnosis of alcoholic paralysis is the most consistent and most tenable. My experience of this disease is limited to two other cases. One I saw only once in consultation with my friend Dr. Drummond of this town. She was an old woman living by herself as landlady of a small beerhouse. She had an enlarged liver and bronchitis, and, I heard, died not long afterwards. The other was a young woman who was admitted into this hospital under my care, and who made a very speedy recovery when removed from all possibility of procuring alcohol. Neither of them afford any information which can throw light upon the present case.

I would draw your special attention to the diagnostic significance of the painfulness or hyperæsthesia of the muscular masses. I cannot assert that this symptom is absolute proof of alcoholism, but it is of the highest value in directing your suspicions in that direction. The vaso-motor disturbances, sweating, œdema, &c., are also of importance, and are well marked in this case. The presence of a large amount of indican in the urine is not of special importance. We look for it usually, and find it frequently, in association with torpid action of the bowèls. Indican is derived by oxidation from indol, a product of the pancreatic digestion of albumen. It is absorbed from the intestine into the blood, and excreted by the kidneys.

I can only speak very doubtfully about the prognosis. Between such happy examples as Dr. Wilks gives, such as was my patient of last year, and those fatal cases recorded by Dr. Broadbent, there must be a long intermediate series. I consider the presence of contractures to be most serious in view of the prospect of our patient regaining the use of her limbs. We have tried without success to remedy the faulty position by extension and massage. Besides these means, our treatment has included galvanism and, for internal medication, strychnia in gradually increasing doses. She has shown great tolerance for this drug, as she is now taking twenty minims of solution of strychnia three times a day without inconvenience, and I must add without much benefit, although her general appearance has considerably improved since admission.—*Lancet, Aug.* 7, 1886, *p.* 242.

16.—ON DIABETIC COMA.

By Julius Dreschfeld, M.D., F.R.C.P., Professor of Pathology, Victoria University; Physician to Royal Infirmary, Manchester.

[Though several forms of sudden death have been observed to terminate cases of diabetes mellitus, that form which has coma for its striking feature is found to be the most common; yet, as Dr. Dreschfeld insists upon, not every case of diabetes ending in coma is properly described as one of diabetic coma in the strict acceptation of the term. Such conditions as intercurrent Bright's disease, for example, may readily induce death by insensibility from uræmia, as also may a large central hemorrhage. But if we except such cases as these, says Dr. Dreschfeld, there remains yet a large number where, without any apparent cause, suddenly, symptoms appear, of which a gradual deepening coma, with more or less dyspnœa forms the most prominent feature, and which leads to death often in a few hours or a few days. These constitute the true cases of diabetic coma. These cases, Dr. Dreschfeld finds, divide themselves in their clinical manifestations, and also probably in their pathology, into three distinct groups: "one form "chiefly characterised by drowsiness soon passing into coma "('diabetic collapse'); a second form resembling alcoholic intoxi- "cation; and a third group, including by far the largest number "of cases, where dyspnœa was usually a most marked symptom, "followed by coma, and where both the breath of the patient and "the urine showed a characteristic odour of acetone, and the urine "contained a peculiar body, giving a deep claret colour with "perchloride of iron." We reproduce only Dr. Dreschfeld's account of his third form.]

The third form—which I would now call, for want of a better name, coma from acetonæmia, by far the most common form, of which I have observed no fewer than sixteen fatal cases, and where

in ten cases, I was able to study the *post-mortem* changes—is the one which will occupy our chief attention.

Since the first exact description was given by Kussmaul, it has been the subject of such a vast number of inquiries, that I will not attempt to trace out the history of its literature. To its symptomatology which is well known, I need also but briefly allude.

The first symptoms consist of lassitude, or some slight dyspnœa or severe gastric pain with vomiting; often there is also some slight headache, restlessness, and excitement. From this initial stage, the patient passes into a state of drowsiness, associated with marked dyspnœa, and this is soon followed by coma and death. If we analyse the symptoms more in detail, and for this purpose I have made use of more than eighty recorded cases, we find the following conditions:

1. As regards the nervous system, there is a period of excitement. During this period, we notice headache, vertigo, a state of excitement not unlike that seen in alcoholic intoxication, incoherence of language, delirium bordering on mania. Convulsions are rarely noticed, and, in the sixteen cases of my own, they occurred only once, and I find them noticed in six other cases, though jactation of the limbs is more common. These symptoms are, sooner or later, succeeded by signs of depression: hebetude, thick speech, drowsiness, and coma. The condition of the pupils is not constant; they react, though somewhat sluggish, almost to the last; they have been found sometimes dialated, at other times contracted. The special sense-organs show us noteworthy symptoms. The fundus of the eye in four cases, which I have examined for that purpose, was found healthy. Star describes in one case a peculiar tint of the retina, the vessels having a peculiar black-coloured appearance, due to fatty embolism (!) Pain in other parts of the body is often noticed, especially abdominal pain, which is often one of the first symptoms observed, and which may be so severe as to simulate peritonitis. The vaso-motor nerves are profoundly affected; the face is often flushed at first, and afterwards becomes pale; the extremities become cyanotic: the skin, at first dry, is often, later on, found covered with clammy perspiration.

2. As regards the vascular system, we notice a soft pulse of low tension, becoming quick, small, threadlike, and irregular. The heart's action is feeble. The veins in the neck are not distended.

3. As regards the respiratory apparatus, we notice marked dyspnœa; this may be one of the first symptoms, and gradually increases up to the last; it is inspiratory at first, and afterwards both inspiratory and expiratory. The dyspnœa is present in most, but by no means in all cases, and has the character described by Kussmaul: the thorax expands well in all directions; on auscultation, air is heard to enter all parts of the lungs fully, and yet there is the great breathlesness—the air-hunger of Kussmaul. The respira-

tions vary in number; often they are not much increased in number; in some cases they may be even diminished. The patient often complains of pain in the chest, and physical examination occasionally shows the presence of limited broncho-pneumonia. The expired air has a peculiar chloroform-like smell, and that this is due to acetone can be easily demonstrated. By allowing a patient to breathe in water only for a short time, I obtained distinct acetone reaction; no aceto-acetic acid, however, could be detected. In all the sixteen cases which I observed, the odour was most marked and present from the very onset.

4. As regards the digestive system, there are noticed the dry red tongue, loss of appetite, nausea, vomiting of copious masses, with intense epigastric pain, which often constitutes one of the first symptoms. The condition of the bowels varies; at t mes there is at first constipation, followed by the evacuation of very copious motions; or, from the first, there may be profuse diarrhœa.

5. As regards the urinary organs, the urine is found diminished in quantity; in cases where the amount of sugar has been determined before the onset of the coma, this too has decreased, and sometimes (in one of my cases) entirely disappeared. The reaction of the urine is often very acid, but not invariably so. Ammonia is often found increased. The urine has the same odour as the breath, and contains acetone. It gives, with perchloride of iron, the claret-red colour which has now been conclusively proved to be due to aceto-acetic acid. In the more recently reported cases, by Minkowsky and Külz, the urine contained also oxy-butyric acid. and the β-crotonic acid of Stadelmann. In the last of my cases of diabetic coma, Dr. Liebmann, late assistant to Professor Keküle, who kindly assisted me in all the other chemical observations, carefully analysed the urine, which was withdrawn by catheter from the patient a few hours before death, and found aceto-acetic acid, but no oxy-butyric acid. In one case, the urine had a distinctly milky appearance, and microscopic examination showed the presence of large quantities of fat. The urine, in all my cases, also showed the presence of albumen—sometimes only a trace, at other times a fairly perceptible quantity. The almost constant occurrence of albumen has been noticed also by Stokvis; in a good many of the other recorded cases, however, it was not detected. In several of my cases, hyaline and small granular casts were seen on microsopic examination.

6. The temperature is usually found to rise during the first stage; with the onset of the coma, it falls, and may, just before death, descend to 95°, 94°, and, as in a case reported by Sir W. Foster, may be as low as 90°.

7. The blood, examined microscopically, shows us noteworthy changes. Where there is much anæmia, we have the usual ap-

pearances of the blood, such as a large number of microcytes and poikilocytes, whilst the leucocytes are found diminished in number. Chemical examination of the blood withdrawn during life, in four cases, showed the presence of fat in very varying proportions. In one case, already reported by Dr. Gamgee, the ethereal extract contained 12·76 per mille; in another, 2·32 per mille; in a third, 6·2 per mille; and in a fourth, 2·15 per mille. The blood, in the two cases where a large quantity of fat was found, separated, on standing, into two distinct layers, of which the upper one had a creamy appearance, and consisted of fat-granules, which, after a time, coalesced into large fat-drops.

Now, as regards the course which diabetic coma runs, it may be said to be fatal in about 90 per cent. Of the fatal cases, some run their course, without any premonitory symptoms, in a remarkably short space of time—from twelve to twenty-four hours. In about 60 per cent. of the cases, however, the disease lasts two or three days, and is ushered in by lassitude, abdominal pain, or dyspnœa. In other cases, the fatal coma is preceded for weeks or months by a condition which may be called chronic acetonæmia, where the exhaled air has the peculiar odour, and the urine contains aceto-acetic acid. When once the graver symptoms of coma appear, death, as a rule, follows. Sometimes, however, the symptoms improve for a time, and then reappear with fatal results, or gradual and steady improvement follows. This, unfortunately, happens in the smallest number of cases.—*British Med. Journal, Aug.* 21, *p.* 360.

17.—ON PERIPHERAL NEURITIS DUE TO LEAD-POISONING.

By Seymour T. Sharkey, M.B., F.R.C.P., Assistant-Physician to St. Thomas's Hospital.

[Dr. Sharkey, in his Gulstonian Lectures on Spasm in Chronic Nerve Disease, makes the following remarks, based upon a fatal case under his observation, regarding the relation of lead intoxication to paralysis of peripheral origin.]

Great interest has been taken of late in the effects of alcohol upon peripheral nerves, and some of our own countrymen have played a prominent part in the investigation of them—Wilks, Buzzard, Dreschfield, Hadden, and others. There is very little doubt that a multiple peripheral neuritis results from the circulation of this poison, and produces such symptoms as neuralgic pains, anæsthesia, paræsthesia, various degrees of paralysis and atrophy, mainly occurring in the extensor muscles, ataxia, abolition of tendon reflexes, vaso-motor disorders, and occasional rigidity. Although our knowledge of this subject is not very advanced, it is probable that this rigidity is of the kind we are now considering—namely, rigidity of the more healthy muscles, which overpower their diseased opponents; and the latter being usually the extensors

of the legs, rigid flexion results. Similarly, in cases of disease of peripheral nerves and muscles on the extensor surface of the forearms produced by lead, rigidity of the opposing flexors is sometimes observed. As I have had an opportunity of making a post-mortem examination in a case of atrophy of the nerves and muscles of the forearm from lead-poisoning, I have brought drawings which illustrate peripheral neuro-muscular disease due to this cause. The drawings were made from microscopic preparations of the muscles of a patient aged forty-eight, a plumber, who was admitted into St. Thomas's Hospital, under the care of Dr. Bristowe, on March 18th, 1882, and died three days after admission from coma following epileptiform convulsion. The patient had had several attacks of intestinal colic and of gout, and had also had "dropped hands" five or six years previously, from which he said he made a complete recovery. For the two months preceding his admission he had been labouring under general dropsy and wrist-drop. His arteries were found to be rigid, his heart hypertrophied, and his urine albuminous, with specific gravity 1011. He had paralysis, with marked wasting of the muscles of the forearm, mainly the extensors, and also of the thenar and hypothenar muscles, and of the interossei. At the post-mortem examination, the heart was found to weigh 22 oz., the valves being competent. The kidneys were contracted, hard, and granular on the surface, and weighed 8 oz. The common extensors of both forearms were pale and atrophied, and quite unlike the healthy muscles, the supinator longus being among the latter. The posterior interosseous

Fig. 38.—Transverse section of the common extensor of the forearm in a case of lead-palsy. The darkly shaded masses in the centre (*a*) are the largest muscular bundles left, most having been reduced to very small dimensions (*b*).

nerve was soft and greyish, while the median and others were firm and white. The microscopic sections of the extensor muscles

from which the drawings were made showed the following peculiarities (Figs. 37, 38, 39, 40, 41) :—Longitudinal section: (1) Here and there were seen well-formed, large, striated muscular fibres; (2) atrophied, but striated fibres, many extremely thin; (3) waxy-looking, non-striated fibres, some of fair size, some very small; (4) strands of wavy tissue, where no muscular fibres could be distinguished, but where long rows of nuclei were seen, like necklaces, often running parallel to each other, and quite close together; (5) very thick-walled vessels. Transverse section showed the muscular bundles very small, each one having a homogeneous appearance, and presenting nuclei irregularly distributed upon it. The nerves were so altered as to be incapable of recognition. The sections of the spinal cord in the cervical region showed no evidences of disease. The supinator longus, as is well seen in the drawings, was practically healthy.

Fig. 40.—Transverse section of the supinator longus muscle from a case of lead-palsy, showing the unaltered muscular bundles (*a a*).

In all these and similar cases, the diagnosis depends upon the electrical reactions of the nerves and muscles in the affected part. For where the rigidity is directly produced by contraction of the affected muscles, the electrical conditions in them closely resemble those of health. Whereas, when the distortion is due to atrophy of one set of muscles, owing to disease of the peripheral nerves supplying them, what is called the "reaction of degeneration" is found in them. Setting aside such cases as these, in which the distortion is produced by rigidity, not of the diseased muscles, but of their healthy opponents, there exists still another class, in which contracture results from the shortening of diseased muscles, it is true, but nevertheless does not depend upon true spasm.—*Lancet, April* 17, 1886, *p.* 726.

18.—ON HYSTERIA.

By Willoughby F. Wade, F.R.C.P., Senior Physician to the General Hospital, Birmingham.

[After laying down certain postulates, as to the physiological state of the nervous mechanisms involved in the various manifestations of hysteria, and the narration of some exceedingly instructive and interesting cases, Dr. Wade goes on to make the following important remarks.]

Cases of hysteria may be usefully, if not scientifically, divided into three classes: first, the simple, genuine, or involuntary cases; second, those in which there is unconscious exaggeration; third, those in which there is conscious fraud or deception. These classes might, perhaps, be as properly described as stages, for there is no doubt the first may glide into the second, and afterwards into the third; or, in other words, there has probably been a time when a case of the third class has belonged to the first. We meet, especially in the third class, with some very curious cases; and oftentimes they are not only curious, but puzzling. For example, a middle-aged unmarried lady's-maid, precise and respectful, and quiet in manner and demeanour, as became the long and highly-valued domestic of two or three decorous and not over youthful gentlewomen, came to the General Hospital. She had been living in London, but had been obliged to leave her place in consequence of feeble health, caused by repeated attacks of "inflammation of the bowels, with sloughing of the mucous coat." Oh no! not dysentery, but inflammation of the small bowels. So she had been told by several medical men in London, whom she named, who had been called in by her mistresses from time to time. Such were her statements; and, though I cannot vouch for their truth, I saw no reason to discredit them. Her reason for coming into the hospital was that she feared that another attack was impending. After a few days, during which she insisted that she was suffering from gradually increasing pain in the abdomen, but no objective phenomena presented themselves, she said she had diarrhœa, and a few days after that she produced a liquid stool, containing some smooth-edged, flat, whitish pieces of something. We found by experiment that these sloughs could not be distinguished, microscopically or otherwise, from pieces of chamois-leather or kid-glove, macerated in water for twenty-four hours. I told her that what she had passed was not mucous membrane, but something she had eaten; and in a few days after she found herself so much better that she would like to go home, and she went.

It is not much use arguing or quarrelling with these persons. What you want to do is to take the romance out of their cases—to show that so far from your thinking them remarkable, and therefore interesting, you know them to be commonplace and uninteresting.

Thus I entirely check-mated a girl who pretended that her bowels had not been open for weeks. I told the mother the truth (which was that I knew it to be untrue), and got her to tell the patient that we did not think anything of it; that some people had evacuations and others had not; that there was no rule about such things. With this somewhat audacious statement—which she, of course, knew to be untrue, but could not well repudiate without spoiling her case—the patient's renewed attempts to excite interest in her case were consistently met, and she was ultimately beaten out of the field. Instead of denying her statement we accepted it as gospel, but in a way that took all the interest out of it. She kept up the pretence for a very long time; and, curious to say, although frequently watched, it was never discovered where or when the bowels were moved. I have seen other like cases. In another very curious case, an abandoned thief imposed upon the gaol authorities, and obtained a free pardon on the ground of ill-health, and so escaped a long term of imprisonment. On her discharge she was brought to the hospital, and the only thing that was real about her case was that her periods were very profuse. In the gaol, she was supposed to have copious hæmatemesis, and had been seen by the matron in the act of vomiting blood, the possible source of which I refrain from even suggesting.

On hysterical retention of urine I have only two words to say. It is very commonly the initial phenomenon, and is most useful, therefore, as furnishing the key to subsequent manifestations; and, secondly, that it is not often repeated when its treatment is left in the hands of the nurse, instead of being undertaken by the medical man.

Of hysterical vomiting I have seen several cases, and have not found much difficulty in dealing with them; but a particular course must be followed, which presents no difficulties in hospital practice, in which only have I met with these cases. In private practice it might be less easy to pursue. These cases begin with occasional vomiting two or three times a day only, or even less. As soon as you know what it is (which at first you may not) treat it with indifference. It soon becomes more frequent. In a few days the nurse will tell you that everything taken is immediately rejected. You order a teaspoonful of water to be given at intervals and nothing else, saying that you are quite sure that will stay down. You will hear the next day that even that is immediately thrown up. Then you have got her. Place her flat on her back with the head well thrown back on the pillow, the neck and upper part of the chest being fully exposed. Let her swallow a teaspoonful of water, and keep your eyes steadily fixed on the throat; in a short time you will see a slight movement in the muscles of the throat. Say at once, "Don't do that again; anyone can make himself sick in that way." The attempt may be repeated, and

must instantly be checked. You watch her for a quarter of an hour, and then point out to her that she is wrong in supposing that nothing can be retained. You will not be bothered by any recurrence of this symptom.

We do not see a great deal of emotional hysteria in our practice; and what we do see is rather in the middle-aged than in the young; and is, in fact, if I may be allowed the Hibernicism, not hysteria, but drunkenness. Judging from my experience in Parisian hospitals, I should say that this phase of hysteria is more common in the Latin races than in the Anglo-Saxon. "Attacks of the nerves" seems to me also of more frequent occurrence in French than in Anglo-Saxon works of fiction. In slight attacks a simple expedient is often successful, probably by diverting the patient's attention; cause her to make a deep inspiration and a full expiration; a few repetitions are followed by complete calm. Hysterical coma is a very curious condition, and is commonly in some degree connected with alcohol. It is most quickly relieved by an enema of assafœtida.

Reverting for a moment to the cases in which we are wont to recognise the existence of fraud and imposition, it is questionable whether in many of them we are not using a term not strictly accurate. Whether we should not rather regard them as examples of partial mental aberration, the result of a dominant idea, the desire for sympathy, than of intelligent, intentional, and conscious deception. It is, perhaps, a fine distinction, and, if sometimes a just one, we must admit that, in the words of the cynical Heine:

> "In case of women,
> One knows never where the angel
> Ceases, and the deuce commences."

These words are, also, apposite to another question. To what extent is there commonly in hysteria an erotic element? The answer to this turns largely on the meaning which we attach to "erotic." Amongst men of the world the interpretation would be of the grossest and most carnal character; and too many of us would, and do, accept this view, thoughtlessly, I think, and erroneously, in respect to the virginal sex in general, and no less erroneously as regards cases of hysteria. But the word has another sense not less classical, for it rests on the authority of Plato, and one which, in my judgment, is more in accord with the passive or receptive *rôle* of women in the processes of reproduction. In this sense it refers not so much to the lower animal passions—though these are not altogether excluded—but to the higher sentiments, from which spring all the graces and most of the charms which adorn the sex, and which do, as there is a physiological reason—indeed, necessity—for their doing, attract our own. In this sense there is, I believe, commonly, and in the other but rarely, an erotic element in hysteria.—*Lancet, June* 19, *p.* 1152.

19.—ON SOME CERTAINTIES IN THE THERAPEUTICS OF EPILEPSY.

By C. L. Dana, M.D., Physician to Bellevue Hospital, New York.

[Dr. Dana places in the first rank of the various means at our disposal in the treatment of epilepsy, Dietetic and Hygienic measures, and then proceeds to state, in a series of aphorisms, his views upon the use of Drugs in this disorder.]

1. The bromides take the second rank in the treatment of epilepsy. All bromides act alike in this disease. If one does not cure, another will not. Occasionally changing and mixing reduces the attacks for a time, and benefits the stomach.

2. The best bromides are those of potassium, sodium, ammonium, and hydrogen (hydrobromic acid); possibly we may add nickel. Bromide of potassium is the most trustworthy. Bromide of sodium is more agreeable to the taste, less irritating to the stomach, and milder in its effects, but is eventually just as depressing as other forms. Bromide of ammonium has a brief stimulant effect on the circulation. Hydrobromic acid is useful in those cases in which there are indigestion and phosphaturia, and an alkali is contra-indicated. It produces acne less readily than the alkaline bromides.

3. Bromides should be given in daily doses of ʒ j, increased gradually until the attacks are suppressed, or the dose reaches ʒ iv to ʒ j daily. Few patients can tolerate more than this latter dose. Thorough bromidization should be always tried if necessary to stop the fits, and it may be occasionally repeated. But bromidization is sometimes injurious, even making the disease worse, and it must always be employed with caution.

4. When the fits are suppressed, the bromides should be carefully reduced, but never entirely stopped for at least two years after the last fit.

5. In most cases, and especially in nocturnal epilepsy, an extra large dose of bromide should be given at night.

6. It is very important that bromides should be chemically pure, that their use should be continued a very long time, and that their depressing effects should be offset by tonics and all possible roborant measures.

7. The best non-specific adjuvants (drugs) to the bromides are potassium iodide (in syphilitic epilepsy), potassium bicarbonate (in lithæmic and rheumatic states), carbonate of ammonium, the hypophosphites, arsenic, iron, and quinine.

8. The other chief adjuvants to the bromides are diet, exercise, a regular life, hydrotherapy, counter-irritation on the neck, and, in the line of drugs, zinc, belladonna, strychnine, valerian, and the nitrites. Combinations of bromides with the other drugs mentioned will lessen attacks when bromides alone will not.

Other drugs which sometimes help the bromides are digitalis, *Cannabis indica*, ergot, conium, chloral, the salts of copper, picrotoxin, and borax. None of these do any permanent good alone, and their value as adjuvants is not uniform or generally conceded.

9. The best substitutes for the bromides, when these do no good or do harm, are belladonna, zinc, strychnine, glonoin, borax, and alteratives.

10. Bromides stop the fits in from five to ten per cent. of cases, oftener if given early in the disease, if given to young children, and if given in cases that develop after twenty-one. Bromides lessen the fits in from eighty to eighty-five per cent. of cases. Bromides do no good, or do actual harm, as regards frequency of attacks, in from five to ten per cent. of cases. Bromides do no actual good to the patient in a much larger proportion of cases.

11. To prevent bromide acne, arsenic, calcium sulphide, baths, and diuretics are the best measures, or hydrobromic acid may be used. To prevent bromidization, adopt all possible roborant measures: use salt-water baths and regular physical exercise, give black coffee, caffeine, cocaine, mineral acids, strychnine, bitter tonics, cod-liver oil, or give large doses of the bromides every three days only. In all cases dilute the bromide preferably with carbonic-acid water or Vichy in the proportion of six ounces of water to a scruple of the drug. The continuous administration of an alkaline bromide in an alkaline water sometimes affects the bladder, and then the bromide can be given dissolved in hydrobromic acid.

12. The remedies that are especially useful in *petit mal* are, after the bromides, belladonna, glonoin (?), *Cannabis indica* (?), cod-liver oil, ergot (?), counter-irritation at the back of the neck, and cold spinal douches.

13. For epilepsy in children, besides the bromides it is advisable to employ a milk diet, rest, and oxide of zinc. Belladonna, if tried, should be given cautiously.

14. For adults and chronic cases, use the bromides, belladonna, iodide of potassium, and ammoniated sulphate of copper. Oxide of zinc is here of less value.

15. For nocturnal epilepsy, increase the dose of bromide at night, and add chloral or digitalis. Give also, if needed, strychnine. Raising the head of the bed or making the patient sleep in a chair at night are measures to be tried.

16. For hysterical and erythritic cases, with or in place of bromides give a diet of milk and vegetables. Try turpentine, valerian, or zinc. Belladonna is usually contra indicated.

17. Counter-irritation by means of blisters, issues, and setons at the back of the neck, is a useful adjunct to treatment, especially in *petit mal* and in cases with mental derangement.

18. For the status epilepticus, give large enemata of chloral, and

use emetics and purges. Venesection is often efficacious, morphine is dangerous, chloroform is only palliative, and nitrite of amyl is of little value.

19. To prevent impending attacks, the best remedy is nitrite of amyl, which may be carried in a phial filled with cotton. Inhalation of chloroform or ammonia, the internal administration of ammonia, spirits of lavender, or alcohol, a sternutatory, and pressure on the carotids—all are measures which sometimes stop the attack.

20. Alterative and habit-breaking drugs, such as mercury, iodide of potassium, arsenic, antimony, are useful in epilepsy.—*New York Medical Journal, April* 24, 1886, *p.* 454.

20.—ON NIGHT PALSY.

By W. E. Steavenson, M.D., Electrician to St. Bartholomew's; Physician to the Grosvenor and the Alexandra Hospitals.

[Dr. Steavenson's paper refers to a condition previously described by Drs. Ormerod and Saundby under the title of "A Peculiar Numbness and Paresis of the Hands," and which occupied the attention of several writers in the Lancet in the early part of the present year.]

I have had several cases of this affection sent to me for treatment in the Electrical Department at St. Bartholomew's Hospital, and venture in this paper to give a review of the subject, and to record the opinion I have formed of the nature of the complaint. All my patients have been women, usually at or near the climacteric period of life. Some few had passed it by a year or two. I have seldom seen the affection in an old woman, but I remember to have seen one case over the age of sixty years. I have also met with it in women between the ages of thirty and forty years. The attacks have very often followed a hard day's work, such as washing and scrubbing, or have been due to other causes producing nervous exhaustion. The patients have usually been awakened towards morning by tingling and pains in the arms. The limbs seem swoollen, and there is a sensation of bursting and fulness. Real swelling is very slight if present at all. Patients cannot raise the arms to the head. Sometimes with a little rubbing the arms recover somewhat, but after raising them for a short time, for such a purpose as dressing the hair, they again become useless, much in the same way as with a painter who is working at a point above his head, and has to rest his arms occasionally on account of the useless feeling which is so produced in them. This fact might be used as an argument in favour of Dr. Notley's theory that the affection is due to anæmia. Patients who suffer from this form of paresis often have a dread of impending paralysis, and look upon these morning attacks as premonitory symptoms. After a short time, and with rubbing, the numbness and loss of power pass

away. When tested by electricity the muscles of the limbs react normally to both the continuous and interrupted currents.

I recognised this affection in 1882, and included several cases under the head "*Loss of Power and Pain in the Arms*" in a paper in St. Bartholomew's Reports (vol. xix, 1883). In the same volume of the Reports appeared the interesting paper by Dr. Ormerod before alluded to. The reference I made to the affection in 1883 was vague, but on reading Dr. Ormerod's paper I was sure that we had recognised the same complaint, and I immediately called upon him and told him that I had under treatment several cases of the kind. I always now class them under the head of "Night palsy." It is very much more frequent at the climacteric period than at any other time, but it does occur in women of what I may call an hysterical temperament at an earlier age.

In the class of patients I see at the hospital it often seems to be induced and associated with hard manuel work. A day's scrubbing is followed by an attack of "night palsy." The symptoms are so constant and so well described by Drs. Ormerod and Saundby that there can be no doubt that this is a well-defined and not at all an uncommon complaint. Very few other observers but Dr. Saundby have seen the affection in men. Dr. Ormerod has never seen the affection in men. Dr. Saundby has also raised a most interesting question as to the pathology of the complaint.

Is the affection due to gastric irritation or to anæmia (as suggested by Dr. Notley), or is it purely a functional disturbance of the nerves occurring in a particular sex, with a particular temperament, and usually at a certain time of life?

Dr. Weir Mitchell in his work on Disease of the Nervous System, in the chapter on "Some Disorders of Sleep in Nervous or Hysterical Persons," alludes to the several forms of sensory and motor disturbances which occur usually just at the time of passing from consciousness into a state of sleep. He says they are "quite common among hysterical women, more rare among men." In the case of a physician that he quotes some of these symptoms came on when he had been reduced rapidly to a weak anæmic condition "after a season of greatly excessive labour," but he says "most of the cases are women worn out, or tired out, and hysterical." If such symptoms occur in men he considers them chiefly due to excessive tobacco smoking. He afterwards alludes to the particular train of symptoms described by Dr. Ormerod, and to which he was the first to give the name of "Night palsy." He says it occurs "in a variety of degrees in feeble and anæmic persons; but far more common among women than among men. . . . The less common form of night palsy is perhaps also the more serious, but may be, like the usual examples, but an expression of hysteria or of the exhaustion felt by an ill-nourished brain during the long fast of the sleeping hours. . . . In weakly and hysterical people it

means simply a temporary failure of function owing to imperfect nutrition."

Dr. Mitchell seems to think the best remedy for these troubles is to be found in general treatment, good diet, iron, attention paid to the state of the stomach and bowels, and faradic stimulation. He also recognises the value of the bromides.

Dr. Ormerod says, "It seems possible that in the general depression of function which takes place during sleep, the hands and arms (or rather their nervous apparatus) overtaxed during the day by prolonged cold or exercise, share more deeply than other parts, and that they are thus less readily roused from it. . . . The cause alleged by the patient is usually the use of water in washing, scrubbing, &c.; sometimes other work, such as needlework. . . . The women are generally over forty, about the time of the cessation of the menstrual function, though this is not always so. Some are no doubt hysterical," but Dr. Ormerod thinks that "there is, on the whole, less extrinsic evidence of hysteria than one would expect." He says "that bromide of potassium has in some cases given marked relief."

Dr. Saundby believes the condition to be distinctly connected with disordered stomach. He has seen the most severe forms of the malady in men, but "in its minor forms it is more common in women." Most of his patients have been past middle life. He attributes very little influence to the menopause. He relies for treatment upon calomel and rhubarb, but the first case he quotes certainly derived benefit from bromide of potassium, and Dr. Saundby says that in her case he could "not elicit any symptoms of dyspepsia."

I have been led to consider this affection a functional derangement of the nerves, occurring for the most part in women at or about the climacteric period, and in my experience appearing to be more likely to occur in women of an hysterical temperament. I believe that the period of the menopause has a decided determining influence on the occurrence of these seizures. As Dr. Saundby says, "we are all familiar with the various forms which neurasthenia takes in climacteric women," and I believe that this "special form of numbness of the extremities" is one of them. At or about the time of the cessation of the menstrual function women's nervous systems undergo a profound change. Often at this time nutritive changes are also apparent. A thin woman becomes corpulent; those with any tendency to the growth of hair on unusual parts again develop it, although the growth may have ceased or almost disappeared during the child-bearing period; the tendency to the return of hysterical symptoms is also most common. All the patients I have seen who have suffered from this affection have been women, and in this I agree with most other observers. It very possibly occurs as often in men as true hysteria does. The

coffin-maker described by Weir Mitchell as being troubled with some form of this complaint was a poor, weak, hysterical individual.

The suggestion that this affection may be due to gastric irritation is new to me. Dyspeptic symptoms were certainly not prominent in, or complained of by, my patients. All the cases I have had have recovered with rest, bromide of potassium, and galvanism.—*Practitioner, June*, 1886, *p.* 409.

21.—ON INFANTILE CEREBRAL PARALYSIS.

By R. N. Wolfenden, M.D.Cantab., Senior Physician to the Throat Hospital, Golden Square, London.

[Dr. Wolfenden's paper contains the narratives of four typical cases of the disease named by Heine *Hemiplegia cerebralis spastica*, and by Strümpell *Poliencephalitis acuta*. A table showing the main points of distinction between infantile paralysis of cerebral and spinal origin is also given. Dr. Wolfenden gives the following account of the disease.]

The disease, to which we may thus give the name of cerebral infantile paralysis, may be described in the following terms:—A healthy child is attacked with one or more convulsions, vomiting, and fever, which may last from a day to two or three weeks, or may be so slight as to be scarcely recognised. Complete hemiplegia results, and if it is of the right side of the body, speech is generally affected. Sometimes the paralysis is manifested as a monoplegia of arm or leg, and more rarely it assumes a paraplegic form. At this stage the little patient may remain for a longer or shorter time unconscious; in one of my cases coma was said to last for forty-eight hours. In other cases the initial attack is transitory, and the child appears well in a few hours, but a partial or complete hemiplegia has resulted.

This completes the first stage. Facial paralysis is rare, but strabismus not unfrequently is met with. The second stage is that of recovery, and may be said to last until a stage when permanent mental defect is first noticed, accompanied frequently with epilepsy. The recovery during the second stage is tolerably complete, the leg usually being the first to amend. There is always, however, loss of power on that side, and inability to adjust the actions of the limbs for fine movements. Athetosis is generally marked. The recovery from the paralysis is usually followed by some degree of shortening in the limb, and though the muscles are not atrophied there is usually a difference in the circumference of the limbs, the arm and leg of the affected side measuring less than their fellows of the opposite side. The sensation in the limb, which may have been affected during the initial stage, is usually perfect. The tendon-reflexes are exaggerated. The limbs retain their usual

warmth. At a variable period it is noticed that the child is late in talking, or fails to talk intelligibly. True epileptiform attacks often develop, and the child grows up *non compos mentis*, or truly epileptic. This constitutes the third stage.

The muscles never exhibit any electrical degeneration-reactions, and contraction to the faradaic current is perfectly maintained.

With regard to the *etiology* of this disease, it seems so far to be doubtful how much heredity is concerned. Strümpell noted two cases (out of twenty-four) which he ascribed to blows on the head. I think dentition had to do with at least two of my cases. Ranke does not attribute his eleven cases to any particular etiological cause. I have seen one case follow measles. Strümpell has also seen one case after measles and one after scarlet fever.

With regard to the *age* of the patient, out of Strümpell's twenty-four cases, seven were under one year old, eight from one to two years, four from two to three, and five over three years old. One was only four weeks old, and the eldest was six years. Ranke's eleven cases occurred all before the fourth year. My cases occurred, three under one year, one between one and two years old, and one at four years old. Thus, out of forty cases, nineteen occurred under three years of age, thirty-four under four years, and only six over four years of age. The disease is, therefore, one of early infancy, and thus resembles the spinal form of the disease.

The *initial stage* may last from two to three days to as many weeks, and is ushered in always suddenly, sometimes with extreme severity, sometimes almost without any convulsions at all, the first thing noticed being hemiplegia.

In one of my cases, *unconsciousness* was said to have lasted for forty-eight hours. Probably, as Strümpell suggests, many fatal cases of so-called convulsions are due to the severe initial stage of this disease.

Athetosis occurred in seven out of Ranke's eleven cases. I noted it in three of my five cases. These athetotic movements occur probably in the majority of cases, but, as Strümpell remarks, are sometimes rendered evident only on movement of the limb.

In four of my five cases the *intellect* was affected. Ranke noted this in three of his eleven cases.

The supervention of *epilepsy* is common.

The *prognosis* as to partial recovery of the affected side is good. Probably there is always some impairment of power and permanent dragging of the foot, and inward turning of the ankle. Where speech is lost at first, the prognosis as to recovery must be very guarded. Sometimes it remains unintelligible. Epilepsy must be expected to supervene as the child grows older. Though some cases appear to recover permanently, it is probably the minority,

and the prognosis will therefore be very guarded, or even distinctly unfavourable. It must be borne iu mind that many of these cases are attended with complete loss of intellect.

With regard to *treatment*, it is probably not often that one is fortunate enough to see the patient at the earliest stage, and there is little to distinguish the case from one of convulsions due to other causes. In a later stage, cod-liver oil and tonic treatment will be indicated. I have found much benefit from the use of the constant current. Where the intellect is hopelessly impaired, moral treatment will be necessary. When not mischievous, most children in this condition have strong imitative faculties, and these can be turned into a useful channel.

The *pathology* of this disease is as yet very obscure. As in infantile spinal paralysis, the motor grey matter is the seat of the lesion; in the spinal form the anterior horns, in the cerebral the grey cortex. In all old cases of infantile cerebral paralysis, Strümpell has found porencephalic defect in the cerebral motor area, the result of an inflammatory process, and thus not *congenital*, that is, due to arrested development. Gaudard considers it a meningo-encephalitis of the motor region of the cerebral cortex, and also allows that it may be due to embolic or thrombotic softening or cerebral hemorrhage. Strümpell says it is always inflammatory, and the nature is indicated by microscopic examination, which resembles the inflammatory microscopic appearance of the spinal grey horns. Wohlmuth found the right hemisphere in one case affected with pachymeningitis, and about one-third its natural size. It must be remembered that Gowers has attributed the sudden hemiplegias of childhood to thrombosis of the longitudinal sinus, or veins opening into it. This leads to shrinking and induration of the cortical areas. The question is whether the disease is really a variety of spastic hemiplegia. It seems to me to bear a remarkable resemblance to spinal paralysis, and I cannot resist the thought that it is a similar affection of the cortical area of the brain, as Strümpell affirms. Pathological observations on this point are much required; meanwhile the question may be considered *sub judice*, with strong probability that the disease is really a newly-described variety of hemiplegia in childhood, pathologically resembling acute spinal paralysis, in that it is an inflammation of the motor cells of certain areas of the cerebral cortex, leading to permanent loss of function of the part, due to subsequent atrophy and destruction of this area.

Of course, infantile hemiplegia is very common, but the importance of Strümpell's contention is in recognising this particular form of hemiplegia in children, clinically so well characterised, as a cortical form of "essential paralysis" closely allied in its pathology to the spinal disease.—*Practitioner, Sept.*, 1886, *p.* 165.

DISEASES OF THE ORGANS OF CIRCULATION.

22.—ON CONGENITAL CARDIAC MALFORMATION AND ENDOCARDITIS IN EARLY LIFE.

By Sir Dyce Duckworth, M.D., F.R.C.P., Physician to St. Bartholomew's Hospital.

[The following excerpt is taken from an address on cases of Valvular Heart Disease long free from Serious Symptoms—specially dealing with the question of prognosis in cases free from symptoms for five years and longer. For the purposes of the inquiry Sir Dyce Duckworth makes a classification of the cases thus:—(1) Congenital malformations and endocarditis in early and in adult life; (2) Rheumatic valvulitis in its widest aspect; (3) Valvulitis in the adult as the result of strain, or of strain together with alcoholic intemperance and hard living in general, including arteritis and valvulitis traumatica; (4) Valvulitis in connection with renal disease, and as associated with general arterio-capillary fibrosis; (5) Valvulitis in connection with anæmia; (6) Syphilis in relation to valvulitis.]

The large majority of cases of valvular disease due to congenital malformation are inconsistent with viability, or with continuance of life beyond a few months or years. Cases of morbus cæruleus may reach adult life, but they are naturally attended with many symptoms and risks. None of these claim our attention. In some cases, however, we meet with evidences of congenital cardiac malformation, unattended by cyanosis, or by very little. Sometimes the general bodily development is satisfactory, though, most commonly, such patients are stunted in growth, and slim. In the less marked cases, the first-noticed signs of imperfect health may be the very slow general growth and development. The child is backward, and so much so that the rachitic state may be suspected; but, on careful examination, no signs of rickets are to be found. A little duskiness of the fingers and toes, and a slight clubbing, may be appreciable, both here and at the end of the nose, but not always. In any such case, it is proper to examine the heart, and a murmur will not uncommonly be found; albeit, no symptoms of cardiac disturbance have obtruded themselves. With care, such children may grow up, and if their constitution be good, they seem to do fairly well in life. They may pass through the exigencies of school life, and may even take part in athletic exercise. The prognosis is naturally better for girls than for boys. The period of puberty is trying for the former, but may be surpassed; some dyspnœa on exertion, or inability for prolonged exercise, may be all that is complained of, but not even this in some cases. Acute illnesses may be tided over, of which pertussis, measles, and scarlet fever, are the most trying; and, in

one of these, it may be, or on some other account, if the heart be examined, a murmur is detected. It may be very loud, and cause alarm or anxiety to the observer. In some cases, the subjects of malformation may enter upon the active duties of life with their special trouble undetected. I have met with several of such instances. The following, I believe, to be an example :—J. A., aged 41, a well-grown man, came under my care lately in St. Bartholomew's Hospital. When he was 18 years old, he was enlisted in the Royal Marines, and served for four years; he was then discharged from the service on account of palpitation. He had scarlet fever at 9 years of age. When he was 29, he was admitted to St. Bartholomew's for dyspnœa and palpitation. At the age of 33, he had hæmoptysis for the first and last time. He had never had rheumatism or syphilis, so far as he knew. For twenty years past, he had been subject to dyspnœa. Examination of his heart revealed no obvious enlargement, the apex-beat in natural situation, and a loud, rough, systolic murmur heard all over the chest, and both sides of the back. The murmur was loudest in the area of the conus arteriosus and pulmonary artery, the second sound being but faintly audible over the right ventricle. The pulse was locomotory, but not otherwise of aortic type. There was clubbing of fingers and toes, no dropsy, and but the slightest appearance of cyanosis. The kidneys were healthy. The diagnosis here was congenital stenosis of the pulmonary artery. I could not satisfy myself as to an imperfect ventricular septum, albeit it might have been expected in such association, and because of the widely diffused convection of the murmur, especially posteriorly. Had this existed, I should have expected more marked cyanosis, and generally graver symptoms. Now, this man had been accepted for the hard service of the Marines, and had gone through the most trying part of his military training—the first two years, and only failed after four years' duty. It is to be supposed, therefore, that his cardiac murmur had been undetected when he passed as a recruit, and he probably had it all his life. The worst feature of his case, on his last admission, was the presence of pulmonary consolidation and softening at both apices, also a laryngeal ulcer; and though bacilli were not found after several examinations, I have no doubt, from his symptoms and temperature-chart, that he is the subject of tuberculosis, which we know to supervene commonly in association with congenital cardiac disease when this happens to permit viability, and consists mainly of pulmonary arterial stenosis. The prognosis, in such a case, has reference, henceforth, to the condition of the lungs rather than of the heart. Tuberculosis is apt to proceed, but there exists evidence to show that its progress is somewhat inhibited by the presence of the cardiac disease.

I should like to refer, parenthetically, to a point respecting the prognosis in cases of congenital cardiac disease, the subject of the

exanthemata, or of continued fever. It is a matter of interest, and but little is known about it. Are these patients ill-fitted to bear acute disease of this kind? I have known them, even when very cyanotic, to pass through measles, enteric fever, and pertussis. Scarlet fever seems to be particularly dangerous, even in a mild form.

Pertussis and measles are naturally dangerous, owing to pulmonary complications. At the London Fever Hospital, Dr. Cayley informs me that they do not appear to have had any patients with cyanosis suffering from scarlet fever or enteric fever in a severe form, though the results have not been favourable. In one case, the attack of scarlet fever was very mild, but the patient succumbed from the state of the heart and lungs. One case of enteric fever, the subject of cardiac malformation without cyanosis, died after a long, but not very severe attack. There was found, after death, an opening from the aorta into the pulmonary artery. All the valves were healthy and normal.

In my experience, it is quite the exception for cyanotic cases to be free from symptoms, oftentimes serious, referable to the heart and pulmonary circulation in the course of their short lives. I believe that cases of simple aortic stenosis may perhaps be most favorably regarded in this category. These may be for many years symptomless. Dr. Peacock recorded several examples illustrating this. In one, the patient, an iron-founder, lived to the age of 40, and had cardiac symptoms for only twelve weeks before death. In another, a woman, enjoyed good health, had no dyspnœa on exertion, and lived to the age of 76 years, dying incidentally after an operation for strangulated hernia. There was no rheumatic history. The aortic aperture was reduced to a mere slit, but the heart only weighed ten ounces, indicating no great hypertrophy under the circumstances. Corvisart, Stokes, and Graves have all recorded very similar examples, living respectively to seventy-seven, middle age, and fifty-four years. The mitral valves partake of congenital defects, together with the aortic segments, in some cases. Dr. Peacock believed that complete fusion of two aortic valves indicated congenital origin in any given case. (Mr. Barling showed an example of this defect at the meeting. There had been evidence of valvular disease for ten years. I believe the two fused valves were here practically competent; death was, however, very sudden.) Dr. Peacock also thought that cases in which all the sigmoid valves were fused in either the aorta or pulmonary artery were commoner than those in which only two of them were affected; and he found the malformation more commonly in the aorta when the heart was otherwise natural, only having notes of eight cases in which uncomplicated disease of the pulmonary valves existed.

Consideration of cases such as these seems to teach plainly that,

in cases of congenital malformation permitting viability, without cyanosis, we may find life to be maintained over longer periods than we might naturally expect. I cannot suppose that any law prevails here to prevent the access of grave cardiac symptoms, other than may be found to explain similar conditions met with in cases not of congenital origin. The tendency to tuberculosis associated with pulmonary arterial stenosis pure and simple, the lungs being anæmic, or with imperfect ventricular septum, remains to be duly taken note of in any given example. One lesson coming out of a study of these cases is, that we must not believe all cardiac valvular defects in early life, as is perhaps still too commonly conceived, to be of rheumatic origin. I believe, however, in the occurrence of rheumatic disease during fœtal life.

The congenital cases that do best are certainly those in which there is little or no cyanosis. Dr. Walshe kindly gives me particulars of two cases in which he believed an imperfect septum to exist between the ventricles. In one, there were no symptoms till the fourteenth or fifteenth year, no cardiac symptoms being even suspected. In the other, seen with Dr. Murchison, the patient was free from any indications of heart-trouble till the age of 17, and then there was only occasional dyspnœa and slight cyanosis. He also met with a case of stenosis of the pulmonary artery which was symptomless till the ninth or tenth year. This patient was remembered to have been a little dusky at the time of his birth. He has frequently seen cases of congenital aortic stenosis in youths presenting themselves for military and other public service, and has also met with some rare cases of mitral regurgitation in the adult, for which he has presumed a congenital origin. Persistence of the foramen ovale seems to be rarely recognised for certain during life. It is often suspected in cases which prove to be pulmonary arterial stenosis. It is very common to find this aperture large enough to admit a small quill in cases which have lived a full term, and have been free from any symptoms. Cases have been recorded in which murmur existed with patency (Hayden and Wolfe, quoted by Sansom in Proceedings of Med. Society, 1877-79), and some in which there was no murmur (*ibid.*, Markham, B. Foster, and Mayne) with this condition.—*British Medical Journal, July* 3, 1886, *p.* 7.

23.—ON THE PROGNOSIS OF CASES OF RHEUMATIC CARDIAC DISEASE.

By Sir Dyce Duckworth, M.D., F.R.C.P., &c.

The essential characters of these cases are too well-known to need recital here. It is still not sufficiently recognised that the rheumatic, or, as I prefer to call it, the arthritic diathesis, has other and well-marked characters beyond the joint and cardiac

manifestations. Its features may be discerned by those who will study them in their physiognomical as well as in their textural expression. Strong heredity attaches to it. Rheumatic taint may be roused to activity in intra-uterine as well as in extra-uterine life. Thus may be explained some of the cardiac defects met with congenitally. In the motorial neurosis, termed chorea, we have also, as I believe, in the large majority of cases, an expression of the rheumatic habit of body. Hence, we must be prepared to meet with cardiac valvulitis in persons who have suffered no other manifestation of it than the choreic form. When we come to seek evidence of this, and of the former existence of so-called "growing pains," we shall find that the rheumatic habit has much to answer for—far more, indeed, than we should elicit if we only sought proof of a definite rheumatic illness such as rheumatic fever. We have learned of late years to associate the existence of cutaneous and subcutaneous nodules on various parts of the body with co-existing rheumatic cardiac valvulitis, a very nice and useful point in etiology and diagnosis. We must take this wide conception in forming our opinion as to the cause of any cardiac murmur with which we may be suddenly confronted, and where rheumatism may be suspected as the cause of the mischief thus indicated.

Instances are numerous where murmurs are found when unsuspected, significant of valve-lesions which have given no tokens of their presence in past life. Some are thus practically symptomless; but, in most cases, there is commonly to be found an indication of cardiac or pulmonary disturbance, not grave, it may be, but sufficiently marked to prove that all was not right with the patients.

We find aortic disease more frequent in males, and more common in females who have done laborious work akin to men's pursuits. We meet with mitral stenosis more commonly in females. Males are, more than females, subject to valvular disease in general, as shown by statistics, but this undue incidence for the male is shown to be due to the greater prevalence of aortic disease in them. Cases of mitral incompetency sometimes live to full term of years. As much cannot be said for those in which aortic reflux prevails. In some cases of aortic obstruction and regurgitation, life may be prolonged for many years. In reviewing cases due to rheumatic influence, we must not lose sight of the ill-effects produced in certain cases by myocarditis, leading to softening and dilatation of the heart's walls, whereby fleeting murmurs may be generated, capable, on recovery, of disappearance. Nor can we omit to mention the effects of pericarditis, leading to adhesion of the sac, with general cardiac hypertrophy as the result of this. The latter is more common in children, and, when present, is rarely long survived.

In entering, thus far, into particulars of these cases, I am aware

that I seem to depart somewhat from my text; but I am rather concerned now to lay down principles to guide us in sifting the facts which have already come before us, or may do so hereafter. Our clinical facts must be accurate, if we wish to deduce trustworthy prognostics.

Amongst my notes of cardiac cases, I find many in which no serious symptoms occurred till many years had elapsed. I imagine that this is a common experience after rheumatic valvulitis. In many instances, the lesion was mitral, and of obstructive character. I believe that this is often long unaccompanied by serious symptoms. Professor Gairdner informs me that this is also his experience; but many observers are of a different opinion. Thus, Broadbent affirms that it stands in point of danger next to aortic incompetence, "being, indeed, the most serious of the two in early life." (International Journal of Med. Science, Jan., 1886.) Dr. G. W. Balfour affirms that, in mitral disease, it is rare for the patient to be long without some breathlessness, though no serious troubles may supervene for many years. At any rate, in hospital practice, it is rare for patients to come for advice before the graver symptoms have set in. In most of my cases, the rheumatic attack had occurred some years previously, most often in early life. With respect to many cases of mitral stenosis, I am quite in agreement with Dr. Sansom, as to overt attacks of rheumatic fever forming no part of their history or etiology; but I believe, with him, that the valvular mischief is, nevertheless, often truly rheumatic, the result of a chronic form of the disorder, which leads to stenosis and gradual maiming of the valve. Anæmia is, probably, also an etiological factor in some of these cases.

To speak vaguely of mitral disease, and of prognosis in regard to it, is, of course, too loose a method. The prognosis of mitral reflux, and of mitral stenosis, in pure cases of each, certainly varies in respect of the specific lesion. It is better, I believe, in the former, though I do not necessarily regard the latter, in well-to-do patients, in the second decade of life, with very fearful forebodings.

Where reflux co-exists with obstruction, I think the prognosis much graver. As to compensatory changes in the heart, in mitral stenosis, I would call attention to the fact that there may be limits placed to hypertrophy of the left auricle, by reason of the fibrous toughness of the endocardium, which naturally exists here, and which is often described as morbid. But both hypertrophy and dilatation occur in this chamber. The average age at death, in nineteen cases of mitral stenosis, observed by Dr. Sansom, was 35 years; and of forty-two cases, collected by Dr. Hayden, 37·82 years.

In these cases, compensatory action is secured *pari passu* with

the progressing lesion, and no bad symptoms appear, till, with failing health, advancing stenosis, or as the result of undue exertion, they at last supervene. Dr. Sansom is of opinion that compensation is, on the whole, more certain and more persistent in mitral stenosis than in mitral insufficiency. My experience accords with this. In discussing the question before us, much depends on what we consider to be serious symptoms. I apprehend we should be agreed that by these we mean failure of compensation, cardiac dilatation, tricuspid stenosis, dyspnœa, pulmonary congestions, and dropsy. Of minor symptoms we meet with many in such cases, such especially as palpitation induced by overwork, dyspepsia, or emotion; pulmonary congestion evidenced by cough, and even by hemoptysis, and occasional epistaxis. Some of these rapidly subside after rest and simple treatment. In some instances of rheumatic valvulitis, mitral or aortic, phthisis is associated, and it has seemed to me that the latter disease has been long inhibited by the cardiac concomitant.

Respecting mitral reflux, Sir Andrew Clark reports a case of a gentleman who was condemned to die in less than six months, and who, forty years afterwards, was enjoying good health; and also one where the patient was living, in fair health, forty-two years subsequently, at the age of 85 (Proceedings of Med. Soc., 1877-79). Dr. Semple (Diseases of the Heart) has recorded a case of mitral and aortic valvulitis, after five attacks of rheumatic fever, in a lady, in whom the disease has existed for thirty years. She is now in New Zealand, and is, Dr. Semple informs me, still in good health. In the museum at St. Bartholomew's Hospital, are several specimens, taken from patients who appear to have been long free from symptoms of heart-disease. In one there is sclerosis of the mitral valve, with vegetations on it, and on the left auricular wall; a pendulous vegetation is also attached to an aortic cusp. This came from a woman, aged 27, who had attacks of rheumatic fever at the ages of 16 and 23. She had a loud murmur at the apex, audible behind. She had no inconvenience from her heart, and died of acute nephritis with anæmia.

In another specimen there are but two aortic and two pulmonary valves. These and the tricuspid and mitral valves are all thickened. The aortic valves are quite rigid and stenosed. The whole heart is enlarged proportionally in its several parts. This came from a man, aged 30, who had rheumatic fever fifteen years before death. There were no symptoms till a year before his death, when he had dyspnœa on exertion, much increased in the last week of life. Anasarca only existed for three days at the last. Murchison (Path. Trans., 1865) recorded a case of mitral and aortic disease in a man, aged 45, who had rheumatism eight years previously, had drank freely of beer, and went on without any symptoms till

within six months of his death, from cardiac failure, rupture of the right ventricle (which was fatty), and rupture of an aortic valve. I have under my care a lady, who has had mitral reflux without any serious symptoms for nearly ten years. The lesion began insidiously. There was gouty history in the family.

Dr. Walshe has met with two or three cases with imperfect second sound at the aortic base, which have suggested imperfect closure of the valves, and which have passed on to perfect reflux. These cases were void of all symptoms. I have seen several of such cases, and have now two of rheumatic origin under my care at this time. This would indicate that incipient aortic regurgitation may be a symptomless lesion, and as much might, perhaps, have been predicated.

Dr. King Chambers (Lectures, 1865) has recorded cases of valvular cardiac diseases of long standing, many of them of rheumatic origin. He seldom refers to the special valves affected, and only mentions that murmurs were present. The histories were taken from private practice, and from insurance examinations. There was evidence, in these cases, of great prolongation of life from the time of the original rheumatic attack, and the periods varied from one to fifty-seven years. In most of these cases, eighteen in number, there were no symptoms, and few that could be called serious, save some anginal attacks in a case of aortic disease, in a lady, which had lasted seven years. Dr. Chambers remarks, upon this series of cases, that "you know very well that cases like these are not to be met with in hospital practice, or among the paupers in a workhouse." They are, indeed, only found amongst patients of the well-to-do class, who are able to live carefully, without exposure to poverty and hard labour. Dr. Walshe gives me his experience, to the effect that it was very common to meet with examples of mitral reflux, aortic stenosis and reflux, running on for years, without symptoms fairly traceable to valvular defect. He has known cases, observed by himself from the first, of mitral reflux remain functionally innocuous for upwards of twenty years. Cases of aortic regurgitation, which are symptomless, he has not found to be commonly of rheumatic origin.—*British Medical Journal, July* 3, 1886, *p.* 9.

24.—ON RIGHT-SIDED ENDOCARDITIS.

By Byrom Bramwell, M.D., F.R.C.P., Assistant-Physician to the Edinburgh Royal Infirmary.

[The following are the final conclusions with which Dr. Bramwell terminates an elaborate and closely-reasoned communication, based upon pathological and clinical observations, during the past three years, in the Edinburgh Royal Infirmary.]

1. That my pathological experience leads me to believe that right-sided endocarditis is much more frequent than is usually supposed; and that this conclusion is in no way contradicted, but on the contrary rather confirmed, by clinical evidence and clinical facts.

2. That Sibson's arguments against the tricuspid murmur of early acute rheumatism being indicative of right-sided endocarditis, are not valid.

3. That, in my opinion, a tricuspid murmur occurring in the early stages of acute rheumatism in a previously healthy person who is not anæmic, is indicative of rheumatic affection of the right heart.

4. That whether (*a*) the tricuspid regurgitation is the *direct* result of the inflammation of the tricuspid valve, or whether (*b*) it is due to a rheumatic affection of the wall of the right ventricle, with resulting relative or muscular incompetence, the pathological evidence seems to show that when the right heart is so affected in acute rheumatism as to produce a tricuspid leakage, inflammation of the endocardium of the right heart is often (usually?) present.

5. That although right-sided endocarditis is of frequent occurrence, it is comparatively seldom followed by permanent organic disease of the tricuspid valve; in short, that right-sided endocarditis is an eminently curable affection.

The importance of the conclusion, if it be correct, can hardly be over-estimated. It is not a conclusion of mere scientific and pathological interest, but is of the greatest practical and therapeutical value. It strongly supports the other arguments which I have advanced in my work on the Diseases of the Heart to show that mitral endocarditis is also a curable affection, a view which is by no means accepted by many of our very best and most trustworthy authorities. Thus Bristowe says "the prognosis of endocarditis is very serious. It is rare, indeed, for perfect recovery to take place."

Further, it shows, I think, the immense importance of rest in the treatment of endocarditis. The only reasonable explanation of the fact that mitral endocarditis is more severe and more frequently terminates in permanent valvular disease than tricuspid endocarditis, seems to me to be that the closure of the mitral segments is more forcible and that the inflamed mitral segments are subjected to greater strain than the tricuspid segments. In treating cases of mitral endocarditis our main object should be to imitate nature's method of cure; to place the mitral valve, so far as we are able to do so, in the same condition as the tricuspid valve; in other words, to reduce the force (and also the frequency) of the cardiac contractions and to allow the products of inflammation to be absorbed just as they are usually absorbed on the right side of the heart.—*International Journal of Med. Sciences, April*, 1886, *p.* 431.

25.—ON NON-ORGANIC MITRAL REGURGITATION.

By Graham Steell, M.D.Edin., M.R.C.P., Assistant-Physician to the Manchester Royal Infirmary.

[After dealing with the ordinary forms of mitral disease, Dr. Steell in an elaborate paper on the Diagnosis of Cardiac Disease, proceeds to deal with the difficult question of non-organic mitral incompetence as follows.]

We now come to the very interesting group of cases in which no structural change in the valves exists, while the signs and symptoms of mitral regurgitation are present. 1. The subject may perhaps best be introduced by the illustration of it which chronic Bright's disease occasionally affords. It sometimes happens that the signs and symptoms of this disease have added to them the signs and symptoms commonly met with in valvular disease of the heart. Thus the lungs become congested, there is general venous turgidity, and the liver becomes large and tender. If dropsy has not existed before, it appears in the lower extremities, and spreads upwards. On examining the heart we find it enlarged, and there is evidence that the right side is involved as well as the left; the second sound, audible over the pulmonary and aortic areas, varies less than it is wont to do in pure Bright's disease; finally there is a systolic murmur, having its maximum intensity at the apex, usually accompanied by the first sound, which replaces the murmur entirely behind the mid-axillary line. When a case is seen for the first time under these circumstances, the conclusion is almost inevitable that we have to do with primary heart disease, and not Bright's disease. The presence of albumen, and even casts, in the urine helps us little in the diagnosis, for not only may albuminuria result from venous stasis and mechanical congestion of the kidneys, but organs so affected are ever liable to become the subject of slight inflammatory attacks. Such attacks are so common as to form a characteristic feature in the history of chronic diseases of the heart, and during them one may almost pronounce the patient to be the subject of complicating Bright's disease. The pulse may be held to distinguish between primary Bright's disease and primary heart disease, but finger and sphygmograph alike reveal a low tension—so-called "mitral pulse." Under the circumstances which we are considering, I know only one sign which will settle the question of the existence of chronic Bright's disease and the probable secondary nature of the heart affection, and that is the presence of characteristic albuminuric retinitis. I have several times been in doubt up to the end of the case which was the primary disease, and *post-mortem* examination has revealed advanced kidney disease and a markedly degenerated heart with healthy valves. I am sure that such cases are by no means rare, and the importance of the fact is very great for this reason—that if the symptoms can be attributed

to cardiac degeneration a great deal more can be done for the patient than if they are the product of kidney disease only. Rest, careful feeding, and digitalis are effectual here as in cases of valvular disease. However much Bright's disease may theoretically militate against the nourishing of a patient, in practice we need not fear to prescribe abundant though carefully-chosen nourishment.

2. There is another class of cases which probably ultimately develops Bright's disease if life be prolonged, and these cases are thus allied to the foregoing. Young, apparently robust, men are the subjects of it, and alcoholism the apparent direct cause. There may be or may not be albuminuria: if it exist, a few day's rest in bed is sufficient to remove it. On examination of the heart enlargement is found, probably only slight; there is a failure in the force of the apex-beat, and epigastric impulse may be pronounced. A murmur usually accompanies the first sound, which is never altogether absent, but the murmur is often slight and high-pitched, so that it is very likely to be overlooked. It is, moreover, limited to the apex and never audible behind the mid-axillary line. Under the treatment indicated above, these cases rapidly improve, but are very liable to relapse, so that hospital out-patients are in the habit of coming back periodically for treatment at longer or shorter intervals, and to have the balance of their circulation restored by rest, feeding, and digitalis. Each time, however, the response to treatment is less ready than on the former occasion. Attacks of nephritis are apt to supervene and greatly aggravate the cardiac condition. The albuminuria may entirely pass away, probably, however, only sooner or later to return. These individuals, we believe, have suffered high arterial tension first of all, but chronic alcoholism early determines cardiac degeneration, which alters the whole aspect of the case. I have not been able to trace a gouty diathesis in these cases, but it is probable that an allied condition at least exists.

3. A third group resembles the second so far, only the evil day is not precipitated by alcohol. The subjects of this form of disease have usually passed middle life. They have suffered from excess of mental and physical work, accompanied by "worry," little repose, and defective food-taking. They often, perhaps generally, inherit gout, and are the victims of dyspepsia and an intolerance of certain liquors. Irregularity or intermittence of the pulse is often the first indication of impending cardiac trouble. Too often it is referred by the medical adviser to dyspepsia or functional derangement of the liver; and because there is no murmur audible, the heart is pronounced sound, and only injuriously influenced from a distance. The dyspeptic discomfort leads to defective nutrition by which the labouring, weakened, cardiac walls are starved, while the patient is still active and no less is required of him. A systolic apex-murmur, with the characteristics

already described as met with in cases of incompetence of healthy valves, soon supervenes, and the signs of cardiac dilatation become evident enough, while dyspnœa and dropsy are added to the symptoms. A fatal issue may be long postponed, or may on the other hand follow an apparently short illness, pulmonary apoplexy usually preceding death among other lethal symptoms of cardiac failure. A striking feature of such cases is their really long duration, although the popular "illness" varies much in length.

4. We have considered cardiac degeneration in young life and after middle age. A few words remain to be said of the condition as it occurs in old age. Here, amid the gradually increasing degeneration of the body generally, cardiac degeneration is not an unmixed evil. If the vigour of the heart is maintained out of proportion to the rest of the body, almost inevitably some degenerated vessel will give way, and sudden apoplexy terminate life. Infinitely better for the patient is it that his feeble vessels should be protected from strain by a corresponding weakening of the strength of the heart. Even if mitral incompetence and ventricular dilatation be produced, they need bring with them no more than an impaired capacity for exertion, and a certain necessity for the recognition of a degree of "invalidism" as an almost natural condition of old age.

5. One of the most common forms of systolic apex-murmur is that met with in anæmia. It is probably always accompanied by a systolic murmur in the pulmonary area; and I believe that the latter murmur always occurs first of all, and only at a later period becomes accompanied by the apex-murmur. Whether or not we discard the auricular theory of the murmur heard above the third rib, the evidence in favour of the anæmic apex-murmur being due essentially to regurgitation through the mitral valves is strong. The ordinary symptoms of valvular defect, such as dyspnœa and dropsy, are no doubt explicable as depending directly on the anæmia; but in cases where death occurs, the muscle of the heart is found degenerated and in a state which renders the occurrence of vital regurgitation probable.

The heart is often enlarged, and as the subjects of the disease are usually young, regurgitation through the auriculo-ventricular valves rather than systole catalectic is likely to be the medium by which dilatation of the ventricle is accomplished.—*Medical Chronicle, April*, 1886, *p.* 21.

26.—ON CITRATE OF CAFFEINE IN THE TREATMENT OF MITRAL REGURGITATION.

By A. Ernest Sansom, M.D., Physician to the London Hospital.

[In a communication of a distinctly practical character on Some Modern Remedies in Heart Disease, Dr. Sansom, after a slight

sketch of the march of events in ordinary cases of mitral incompetence, goes on to speak of caffeine as follows.]

Caffeine is the highly nitrogenised crystalline principle, occurring in colourless silky needles, obtained from coffee, tea, or guarana, and existing in other vegetable products—*e.g.*, the kola-nut. Caffeine is said to be a stimulant of the medulla and cardiac centres, to quicken the pulse and respiration, and to raise the blood-pressure when given in moderate doses. It may induce irregularity and intermittency of pulse; it is classed as a stimulant of the cardiac muscle. It acts as a diuretic, though not invariably so. A large number of observers have testified to the beneficial effects of caffeine in various forms of cardiac disease, but there has been by no means a consensus as to its value and as to its mode of action. Francotte found that whilst caffeine increased neither the water nor the urea excreted in the urine in health, it had a pronounced diuretic action in cases of cardiac disease. Riegel of Giessen concluded that it produces the best effects of digitalis upon the circulation, that it is more rapid than digitalis in its action, is not cumulative, and may be administered to the feeblest person. The following is the recent utterance of Professor Jaccoud. The effects of caffeine "are identical with those of digitalis; slowing of the heart pulsations; augmentation of its force of contraction; diuresis; no nauseous effects; no cumulative action. This drug, therefore, does not necessitate an incessant watchfulness. You can employ it in cardiac cases where the kidneys are affected."

As to mode of administration. Pure caffeine is soluble in from 80 to 100 parts of water; its solubility is increased by acids. I have generally employed the citrate, which is freely soluble. It has been objected that this is a doubtful salt, but this objection is of small importance if the proportions of caffeine and citric acid used in its manufacture are definite, the only important function of the acid being to render the salt easy of solution. I employ it in from three-grain to five-grain doses, dissolved in the ordinary saline mixture—diluted liq. ammoniæ acetatis. The dose is generally administered three times in the day, but in some cases once only. Instead of the citrate, the pure caffeine may be employed, dissolved in solutions of benzoate or salicylate of sodium; in these it dissolves freely, and thus a concentrated solution may be made for hypodermic injection. The following is a good formula for internal administration: Pure caffeine and benzoate of sodium, of each one drachm; distilled water, six fluid ounces. Half an ounce contains five grains of pure caffeine.

I now turn to the evidence, in cases under my own care, of mitral regurgitation in which caffeine citrate was administered. It is to be borne in mind that all these were cases of great gravity, in which the resources of ordinary treatment had been for the most part exhausted.

1. *Effects on the excretion of urine.*—[A table of eight cases, not reproduced, is here referred to.] It must be accorded that the evidence of these cases proves the citrate of caffeine to be, in cases of mitral regurgitation, a powerful diuretic. It is shown that the amount of urine passed during a considerable portion of the period when the drug was administered was generally in excess of the diurnal amount passed previously. In some cases the effect is very striking; for instance, in Cases 1 and 3, in which the daily amount ran up in the one case from 12 oz. to 114 oz., and in the other from 32 oz. to 117 oz. In both these cases ten-minim doses of tincture of digitalis were administered with the caffeine citrate, in the first case in three-grain, in the second in five-grain, doses three times a day. It is also, in my opinion, indicated that the influence of the drug as a diuretic may be prolonged beyond the time of its actual administration. Cases 1 and 4 tend to show this, and to indicate that the dictum that caffeine is not cumulative in action must be reconsidered. The cases, however, abundantly prove another proposition—that the diuresis produced by the drug is not invariably salutary, and that the free outflow of urine is not an index of rehabilitation of the general vital powers. In Case 1 the effects were remarkably favourable; there existed extreme ascites and œdema in a woman of fifty-three, the left ventricle being much dilated and hypertrophied; then occurred amelioration and disappearance of all the symptoms, and the patient left the hospital feeling well. There can be no doubt that here the effects were rapidly beneficial. A like result was manifested in Case 2, in which there was evidence of aortic obstruction as well as mitral regurgitation. This case was subsequently treated by convallaria, but the maximum of diuresis was markedly during the *caffeine* period. This patient recovered from all her very distressing symptoms, and went out feeling well. In Case 3, however, one of extreme severity, in which pericarditis, signs of embolism, and renal complication occurred, the patient died at the very time that the amount of urine passed in the day had reached the high figure of 117 oz. May prolonged administration tend to diminish or exhaust the diuretic effect? In Case 4 the second administration was followed by a steady and gradual increase to a maximum daily excretion of 65 oz., but, the administration being continued, the outflow fell to 36 oz., and then to 10 oz. In this case aortic disease co-existed; the patient died. In Case 6 there was a slight diminution under the protracted influence, but here there were very severe complications—viz., empyema and renal disease; this patient died, death being, one might say, inevitable. In Case 8, in which death occurred, there was a steady diminution of the urinary outflow during the administration; but here, in a woman of sixty-four, there existed great ascites and œdema, with advanced granular disease of the kidneys. Considering that in all these

cases the great severity of the complications might in themselves constitute a constant and progressive cause of enfeeblement of cardiac muscle, we should not conclude that the urinary inadequacy was due to any action of the drug itself; it might with so much probability be due to a gradual extinction of the powers.

2. *Effects on pulse and respiration.*—[Reference is here made to a table of eight cases of mitral regurgitation, showing rates of pulse and respiration during treatment by caffeine.] There is evidence, as regards some of the cases, that the rates both of pulse and respiration were reduced under treatment by caffeine. In Cases 1 and 2 the influence was very decided. The sphygmogram taken shortly after admission (Fig. 1) shows with insufficient volume a

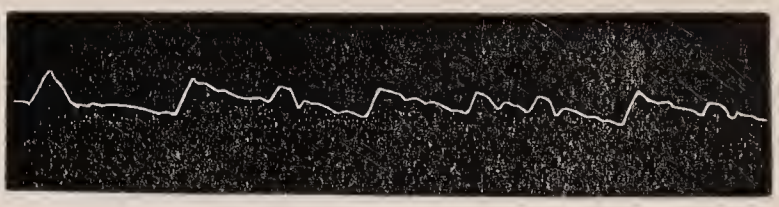

FIG. 1.—Sphygmogram in a case of mitral regurgitation, with œdema and ascites.

great irregularity with interpolated systoles. After five days of treatment, the second sphygmogram was taken, and it is seen that the pulse has become nearly regular (Fig 2). In Case 2 the

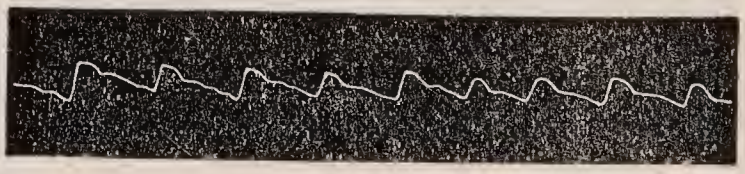

FIG. 2.—Sphygmogram in the same case after five days' treatment with caffeine citrate.

combined effect of convallaria and caffeine is well shown. The pulse, which at commencement of treatment was 92, had now, after six days of treatment, not only become reduced in frequency to 52, but had acquired marked evidence of tension, as shown by the sphygmogram (Fig. 3). In the other cases, complicated as

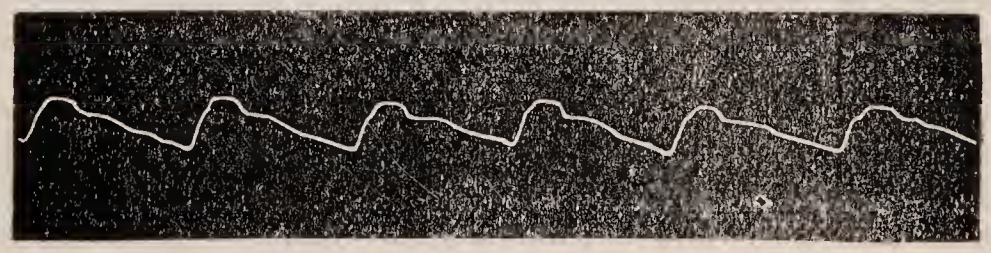

FIG. 3.—Sphygmogram in a case of mitral regurgitation treated by caffeine and convallaria in combination.

I have stated them to be, there was no such favourable reaction, though in Case 7 it is shown that on the omission of the caffeine, the rate of pulse and respiration rose in very considerable degree.

3. *Effects on the temperature of the body.*—In Case 1 the temperature was nearly normal throughout. In only one case (3) was there a rise of temperature under caffeine; then it was from subnormal to 100° F. In the other cases the reduction was from a subfebrile temperature to normal or subnormal. In Case 7 the temperature previously to the administration varied between 99° and 102°, and during the administration between 98° and 100°. It may, therefore, be concluded that in such cases as we have been considering, caffeine tends to depress the temperature. I think we are justified in concluding that caffeine, in the treatment of cases of mitral regurgitation in which failure of compensation has occurred, is a valuable agent; that it is a powerful diuretic, and is therefore very valuable in cases manifesting dropsy; that it tends to increase the force of the heart, to calm the respiration, and reduce the temperature; but that it fails in some cases to be of benefit, even though it may manifest its diuretic effect. Like other heart-tonics, it fails especially in pericarditis, where probably the direct enfeebling agency of the disease upon the myocardium is a cause which operates against it.—*Lancet, March* 20 *and* 27, 1886, *pp.* 536, 582.

[See also an article by Dr. Sansom on the Treatment of Mitral Valve Disease, in *Retrospect*, vol. lxxxvii. (1883), p. 171.]

27.—ON THE EFFECTS OF HIGH ALTITUDES ON CARDIAC DISEASES.

By Alfred L. Loomis, M.D., LL.D., New York.

[Dr. Loomis has contributed to the proceedings of the American Climatological Association a highly instructive and important paper on this subject. The author opens with the narratives of six cases of cardiac disease of various forms, in which death was preceded by more or less rapid change from lower to higher altitudes above the sea level. The method of death in most of the cases seems to have been quite similar to that observed in ordinary cases of mitral disease. Reference is next made to the chemical and physical conditions of the atmosphere at varying heights, and the conclusion arrived at that the only physical property involved in the question under discussion is one of *rarefaction;* this naturally leads to a short review of the observations of Glaisher, Hartwig, Boügier, and others, made in ballooning or climbing expeditions. Dr. Loomis concludes his paper as follows.]

In the ordinary course of ascent from sea-level, a point is finally reached where the normal balance between demand and supply is disturbed, the measure of tidal air becomes insufficient on account of its rarefaction, the tissues call upon the heart for an increased supply of oxygenated blood, and the response is made by increased rapidity of the cardiac rhythm. This fails to satisfy the demand, as

the heart depends upon the lungs for an adequate supply of arterialized blood, and they consequently are called into increased action. Whether the ultimate results are due to an increase in the frequency of the respiratory rhythm, or to an increase in the tidal volume, does not alter the conditions so far as our present purpose is concerned. In order to produce tension on the cardiac muscle, a very high altitude is not required, but the resulting phenomena becomes more apparent the greater the atmospheric attenuation. It is noticeable that the aeronauts and travellers, already referred to, after reaching certain altitudes, almost invariably describe a series of symptoms the result of an increased amount of venous blood, especially in the vessels of the head and face. The subject's lips are blue, the skin is purple, he becomes nauseated, epistaxis ensues, and he describes a distressing cardiac palpitation. The lungs are no longer able to obtain the necessary oxygen from the attenuated air, and the blood contains an amount of carbon dioxide approaching that of asphyxia. Ordinarily, the increased intra-ventricular pressure will send stimuli through the afferent cardiac nerves to the cardio- and vaso-inhibitory centres, and this pressure will be regulated and relieved; but in the conditions producing the effects which I have just enumerated, for a cause which we have yet to seek, this relief is not established.

The two important factors which lead to permanent cardiac insufficiency are, first, the condition of pulmonary distension consequent upon atmospheric rarefactions, and, second, the resultant condition of the circulating blood; in the first, the terminations of the vagus are excited by the distension of the lungs. By the excitation of these afferent fibres the cardiac as well as the inspiratory ganglia of the medulla are paralyzed or weakened, the inhibitory control being lost, the diastolic intervals shortened, and the rhythm increased, but the amount of work accomplished is not proportionate to the display of cardiac energy. The change in the blood, which acts as an important, and ultimately the principal, factor in producing cardiac insufficiency, is its deficiency in oxygen. The vaso-motor centres of the medulla, influenced by want of oxygen in its blood-supply, excite a general contraction of the arterioles of the body, filling the venous system and affording a large heart-supply, while the cardiac pressure rapidly rises as the peripheral resistance is increased. Ordinarily, under such contractions, the heart would relieve itself, as has been previously intimated, by excitation of the cardio- and vaso-inhibitory centres, but these centres are held in abeyance by the condition of the blood circulating in the medulla. This condition of increase in the intra-cardial pressure cannot continue, for the blood in the coronary arteries is poorly adapted to the needs of the organ, by its want of oxygen, to say nothing of its load of carbon dioxide, and, sooner or later, the heart passes into a state of diastolic relaxation which is

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the primary step to a condition of permanent ventricular dilatation. We have already seen that the contact of the circulatory blood with the endocardial surfaces may act as an important factor in the maintenance of the normal rhythm, through the influences exerted directly on the afferent cardiac filaments. It is not improbable that the blood distributed by the coronary arteries, heavily laden with carbon dioxide, also acts as a disturbing factor on the normal action of the heart through this same afferent mechanism. If this explanation of the effects of high altitudes upon the cardiac circulation be accepted, the risks which one, with even slight cardiac insufficiency, runs by passing rapidly from a low to a high altitude are certainly very great, and, if the cardiac insufficiency is extensive, such changes in altitude become immediately dangerous, and it is to be remembered that cardiac insufficiency is not confined alone to those who give the evidences of valvular lesions with cardiac hypertrophy or dilatation, although it exists to a greater or less degree in all such cases, but it is often present in those who give no evidence of such lesions. The ætiology of cardiac dilatation is a subject which, at the present time, is interesting, more than ever before, those who are studying cardiac disease. I have been accustomed to include all the recognised causes of such dilatation under the general head of those conditions which give rise to increased blood-pressure within the heart; and I am confident that the effects of such pressure will vary greatly, whether it is made during the contraction or relaxation of the cardiac muscle. Forcible dilatation of the cardiac wall, when it is in a flaccid state, is far more likely to produce dilatation than forcible dilatation when the wall is contracted. Experiment has demonstrated that, during their contraction, the walls of the heart are able to withstand high internal pressure without their cavities being dilated. If then, as I think I have conclusively shown, when cardiac enervation exists, from any cause, the excessive relaxation of the ventricular muscle which attends it leads to over-distension of the ventricular cavities, and this may result in permanent dilatation depending in a greater or less degree on the condition of the cardiac walls; may not this be the explanation of those sudden ventricular dilatations which I have reported, some of which must be classed under the head of what writers are calling dilatation of the ventricles without any discoverable cause? The important clinical question always to be decided is in regard to the integrity both of the cardiac muscle and of its enervation.

In endeavouring to determine the muscular power of the heart in cases of cardiac disease, it is important to study, from a clinical standpoint, the factors which contribute to the first sound of the heart. While physiologists are inclined to doubt the existence of a muscular element on theoretical grounds, I am satisfied that, synchronously with the beginning of the ventricular systole, an

element of cardiac resonance is projected that cannot be referred either to the apex-beat, the friction of the blood current, or to the closure of the auriculo-ventricular valves. When, with a stethoscope, one listens to the heart of an animal just killed, emptied of its blood, its valves cut, a sound is heard, as I have repeatedly observed during Dr. Miller's experiments after he had eliminated every possible chance of a friction element by placing the heart on a bag filled with air, which has seemed to me to be produced by the muscular contraction of the ventricular walls. Whether we understand everything of cardiac muscular contraction as yet is questionable, and we are obliged to hear the sound without knowing just how it is produced. Clinically, I know that an impairment of the integrity of the muscular structure of the heart-walls results in just such a modification of the first sound as one would expect who had listened to the organ under the conditions just mentioned. The absence of this element in the first sound has come to indicate to me a failure in the integrity of the heart-power which would lead me to caution such a one against passing rapidly from a low to a high altitude. My clinical experience has also convinced me that it is unsafe for one to make such changes whose cardiac rhythm is greatly disturbed by nervous excitement or by rapidly ascending a long flight of stairs. It may justly be said that the number of persons who every year are passing from low to high altitudes without inconvenience is so large that the dangers to which I have referred are insignificant. To one, however, who is carefully watching the effects of climate and altitude on a considerable number of persons with pulmonary and cardiac disease, these effects do not seem insignificant. If I interest others in the study of this subject, I shall have accomplished the object of this paper. —*New York Medical Journal, June* 12, 1886, *p.* 654.

DISEASES OF THE ORGANS OF RESPIRATION.

28.—HEMOPTYSIS AS A SYMPTOM OF PNEUMONIA WITH SPECIAL REFERENCE TO PNEUMONIA AT THE APEX.

By Donald W. Charles Hood, M.D.Cantab., Physician to the West London Hospital.

[After the narration of five cases typical of the condition with which his paper deals, Dr. Hood says:]

My desire in this paper is to emphasise the fact that in certain pneumonic conditions a sharp hemorrhage at the initial stage is symptomatic of the attack, and is, as I believe, directly caused by the inflammatory hyperæmia. In such cases, where a severe hemorrhage ushers in the attack, we shall find the inflammatory focus very frequently at one or other apex, and the physical symptoms of such a pneumonia are often more easily demonstrated at the

posterior than at the anterior region of the chest. Such pneumonia, complicated with severe hemorrhage, is peculiarly connected with lung tissue already the seat of chronic change, whether such change be due to deposition of tubercle or to chronic inflammatory changes. In each of the cases quoted above there was a history of lung trouble, though in each case this trouble, as far as could be gauged by physical examination, was but small. It is a point of interest and of importance that four of the five cases were actually under observation at the time of the initial hemorrhage. The first was under the care of Sir William Gull, who informs me that he had not detected consolidation of the apex previous to the attack of hemorrhage; the second case was in hospital at the time of attack; and the other two patients were in attendance as out-patients. In one of these cases dulness at the apex had been noted before the attack of hemorrhage. In each case the hemorrhage was concomitant with a marked rise of temperature, which, I need hardly say, is not usually the case in simple hemoptysis. In each case the rise of temperature lasted seven, eight, or nine days, and in each case, after the first day of illness, physical signs of pneumonia were easily demonstrated at the lung apex. If, as I believe to be the case, pneumonia of the apex, occurring in a lung predisposed to disease by either tubercle or chronic inflammatory changes, is liable to be complicated with sharp hemoptysis, it will largely explain those cases of phthisis ab hemoptæ the etiology of which appears as yet unsettled. In these cases the inflammatory disturbance which has given rise to the hemorrhage is overlooked, and the hemorrhage consequently regarded as the main factor in the expression. Looking at the later writers on this subject, I find that Hilton Fagge has noted the occurrence of hemoptysis, followed by rise of temperature and subsequent consolidation of the apex, but he does not appear to have appreciated the real significance of the hemorrhage, for he writes: "There is no doubt a *difficulty* in saying how the bleeding is brought about, but it seems very likely that the growth of tubercle in the walls of the alveoli may be attended with an invasion and softening of the coats of many of their capillaries, while at the same time the blood-pressure in them is augmented in consequence of compression of other capillaries." When we think how often a lung is studded with tubercles, and how often in such cases there is no hemoptysis worthy of the name, we must look for another cause than mere softening of the coats of the capillaries by a growth of tubercles in the walls of the alveoli. But, on the other hand, when we take into consideration the enormous hyperæmia which attends inflammation of lung tissue, a ready explanation of the hemorrhage at once presents itself, a hemorrhage which is concomitant with the well-known initial stage of pneumonia, the stage of engorgement. Paradoxical as it may appear, I believe

that, within certain limits, the smaller the focus of inflammatory mischief the greater the liability to hemorrhage, and this may possibly explain the fact that we find hemoptysis a not uncommon symptom with pneumonia of the apex. Doubtless, deep-seated, concealed (as regards all physical symptoms) pneumonia is more common than is usually supposed. Clinically, I have met with several cases in which a sharp hemorrhage has occurred concomitant with rise of temperature, and in which no physical symptoms could be discovered, at least by me. One such case I remember well. A strong, active, healthy gentleman was seized with sharp hemoptysis after exposure to cold; there was slight fever and cough. I could discover nothing whatever in the chest. The attack gave but little real inconvenience. At the time, now fourteen years ago, I looked upon the seizure as one of very grave portent. However, since then there has been no return of hemorrhage symptoms pointing to delicacy of the chest. Another case was that of a young man, aged nineteen, who was seized with a cough, fever, and hemoptysis. I could detect no physical symptoms to account for the attack, but about seven days after the illness commenced I detected some large râles over the base of the right lung—râles, I believe, of crepitatio redux—and I interpreted them as indicative of a small patch of deep-seated pneumonia which was undergoing resolution. This case occurred to me twelve years ago, and the subject of the attack has had good health since that date, and has no symptoms of chest weakness. Such symptoms may be explained by recognising that in connection with a small focus of inflammation, surrounded, as indeed it must be, by a zone of intense hyperæmia, some of the gorged vessels give way, hemorrhage results, and, as I believe frequently is the case, the patient gets rapidly well. Certainly, in the cases of apex pneumonia which I have referred to the progress was rapid as compared with an ordinary lobar pneumonia; the patients were not so severely ill. May not the severity of the attack have been mitigated by the local blood-let? It is not difficult to understand how many of these cases are overlooked as regards their true pathology. Given hemoptysis as the marked symptom, with physician as with laity, one of the fundamental principles of treatment is complete rest and quiet. The chest is but rarely examined; beyond placing a stethoscope over its anterior surface, at most a few râles may be heard, which are explained by the presence of blood. If the temperature be high, it is accounted for by an inflammation set up by this blood. In these cases the posterior portions of the lungs are but rarely examined, and I need hardly say that the apical portion covered with scapula and its muscles requires some care in examination. The dulness on percussion does not come out readily to a light tap; it requires a firm, decided stroke from the wrist; personally I find great use

from a percussion hammer, and with it have found no difficulty in demonstrating the marked difference in note of the two apices when compared the one with the other.—*Lancet, June* 19, 1886, *p.* 1157.

29.—ON PNEUMONIA FROM EXTERNAL VIOLENCE.

By Octavius Sturges, M.D., F.R.C.P., Physician to the Westminster Hospital and the Hospital for Sick Children.

[Dr. Sturges publishes an interesting paper in which the evidence for and against the traumatic origin of acute croupous pneumonia is carefully and judicially examined. A case occurring in the practice of the author at the Great-Ormond Street Hospital is narrated, in which four days after the receipt of a blow upon the right chest, the patient, a boy eleven years old, passed through the crisis of an ordinary acute pneumonia. At first sight it seemed like a conclusive example of traumatic pneumonia, for the boy was walking the streets at the time the blow was inflicted, but as Dr. Sturges very properly points out, further inquiry gave a different colour to the case. It was ascertained that four days before the injury the boy got wet through, and that he shivered and looked ill, so that it seemed more reasonable to conclude that pneumonia had already commenced in the boy's lung when he was dealt a violent blow just over the seat of it. After referring to cases quoted by Andral, Grisolle, and Wilson Fox, and to a case in which the question assumed a medico-legal aspect, Dr. S. says:]

But while it may be doubted whether either external violence, short of lung laceration, or sudden exertion, ever directly excites pneumonia, there is ground for the belief that both one and the other may give occasion for it. For there is a form of the disease of which the predisposing cause—sometimes so far as seems the sole cause—is deterioration of vital energy, a condition to which at present we can apply no more precise expression. Whatever lowers vitality invites pneumonia. In virtue of that principle, severe bodily injury, as well as over-fatigue or alcoholic excess or destitution, or even mental anxiety, may weaken the power of resisting the disease and make its invasions the easier. Pneumonia of this origin needs the more to be recognised, inasmuch as it is a grave and often fatal disorder, with quite a different outlook from the pneumonia of exposure. To such category would belong, in my belief, the case just quoted from Andral, possibly also the case of the railway passenger, and other examples which I might quote from my own experience, where individuals debilitated by some injury, but apparently on their way to recovery, die quite unexpectedly by the intervention of a pneumonia of such limited area as to seem at first a mere trifle. Considerations of this sort make us properly cautious in accepting injury or overstrain as

efficient causes of pneumonia. Granting that individuals may be up and about in every stage of that disease, granting also that the early symptoms of pneumonia—dyspnœa, pain on deep inspiration, and general muscular weakness—are precisely those which extra exertion or a blow directed against the chest or diaphragm would call into activity and prominence, and it is inevitable amongst a hardworking and boisterous race that accidents of this sort should from time to time call attention to the disease, and appear in the light of causes of the symptoms which they precede.

There is a further question, which I have here expressly excluded, in regard to injuries causing actual laceration of lung tissue, with or without rib fracture. Can such laceration set up true lobar pneumonia? I have no personal knowledge of such an occurrence. But my friend and colleague, Dr. Barlow, has been good enough to tell me of a case of his own which is possibly of that sort. A young stonemason had a heavy stone slab fall on his chest, knocking him down with a very severe blow, yet without fracture of ribs. "He was taken home, and within a day or two developed a typical apex pneumonia. This resolved, but after resolution there was a curious hectic temperature, a condition lasting a considerable time, the morning temperature being normal and the patient meanwhile feeling well and ultimately recovering perfectly." Dr. Barlow adds, "At the time I did not think much of the immediately antecedent injury, but I remember the fact very definitely." Even here it cannot be said for certain that the apex pneumonia was not an intercurrent affection due to the nervous shock of the injury. The facts might be taken in that sense by any reader with predilections of his own in reference to efficient causes of pneumonia. It is indeed the prevalence of predilection on one side or the other which makes the need for further investigation at the hands of independent observers possessed of the rare ability to keep their facts and their theories in separate compartments.

The sum of my contention comes to this. Pneumonia does undoubtedly sometimes follow injury, whether to the chest or elsewhere. In some instances the disease is not really caused by the injury, but only brought to light through its agency; in others it is its indirect consequence—due, that is to say, not to any immediate harm done to the lung, but to nervous shock which, whether it arise from injury or over-fatigue or any other cause, produces a condition of the system favourable to the development of pneumonia. Shall we say, then, that bodily injury is a predisposing but not an exciting cause of pneumonia? It may be so. But as a matter of fact, and notwithstanding that in a country like ours there is generally "weather" to appeal to, the exciting cause often escapes us. That cause, which we call in scholastic phrase "predisposing," be it injury, or sewer-gas poisoning, or

alcoholic excess, is all that we see. To us it is the *sole* cause. And so it may seem that I demolish the very distinction I have been insisting on. Not so. The distinction is a very real and tangible one, and it is intimately connected with the pathology of pneumonia. For if the relationship of cause and effect be of the nature I have tried to indicate, not only do we bring bodily injury, regarded as a source of pneumonia, within the compass of a large class of causes all acting through the nervous system, but, further, we go far to establish the fact that this pulmonary affection, the true lobar pneumonia of definite duration and orderly sequence of symptoms, is not a lung inflammation merely, but the local expression of a wider, and often of a nervous, disorder.—*Lancet, April* 24, 1886, *p.* 782.

30.—A CLINICAL LECTURE ON CERTAIN CASES OF LUNG DISEASE RESEMBLING ACUTE PHTHISIS.

By A. T. H. Waters, M.D., Physician to Liverpool Royal Infirmary.

[The Temperature Charts to which reference is made in the text are here omitted for want of space.]

There are certain cases of acute inflammatory disease of the lungs which so closely resemble in their clinical features acute phthisis, that the differential diagnosis of them is often exceedingly difficult; and I wish to-day to speak to you of such cases, and to refer to some which have come under my own observation.

We are familiar with two forms of acute phthisis; and let me draw your attention briefly to their chief characteristics before I allude to the special subject of my lecture.

First, we have that form of acute phthisis which begins with symptoms resembling those of pneumonia, with crepitation at one apex soon extending to both apices, and followed by rapid extension, and consolidation and disintegration of the lung-tissue. Cavities soon form; there are copious expectoration, rapidly increasing weakness, profuse perspirations, quick pulse, and a temperature reaching a very high level in the evening, and sinking to the normal, or even subnormal, in the morning. The debility is great, but there is not utter prostration, as in the second form. In these cases, death usually takes place at the end of a few weeks, probably within three months from the onset of the attack; and, after death, we find the lungs more or less solidified throughout, with numerous cavities, but few or no tubercles. Such cases are generally met with in somewhat young patients who come of a phthisical family. To this form of the disease, we give the name *acute pneumonic phthisis.* It is a form of scrofulous pneumonia. The chart which I show you will indicate to you the character of the temperature in a well marked case of this kind; the temperature was taken between nine and ten in the morning, and between

seven and nine in the evening. The patient, in this instance, was a young lady whom I attended some years ago. She did not live many weeks from the beginning of her symptoms. She came of a phthisical family, and, after her death, I attended her sister for a similar disease, which ended fatally.

Then there is a second form of acute phthisis, in which the symptoms at the beginning resemble very much those of typhoid fever, in which there is but little cough at first, with but little expectoration, in which the pulse is very quick, and the prostration extreme. In these cases the temperature is high, but it does not present those variations which characterise the first form. It maintains a more even level, rising slightly in the evening, but not falling to the normal in the morning. The physical signs, at first doubtful, soon, however, show the nature of the case. We hear *râles* all over the chest, fine subcrepitant and crepitant—indications of the existence of a general capillary bronchitis, or pneumonia. These cases usually end fatally in a few weeks, and they are often characterised by the existence of head-symptoms. We know that, when the patient dies, we shall find the lungs riddled with tubercles, around which the lung-tissue has become inflamed. To this form of disease we give the name *acute tubercular phthisis*. The charts show the temperature-ranges in two such cases.

Now there may be, in such cases as those to which I have referred, little or no difficulty, except just at first, in forming a correct opinion as to their nature; but I have met with cases in which the clinical features so closely resembled those which I have described, that I have expressed a fear that they were really cases of acute phthisis, yet the patients have eventually recovered; and I have therefore been compelled to ask myself whether I had not made a mistake in diagnosis. Is it possible that cases of acute phthisis can recover?

Whilst I should unhesitatingly say that, when once the second form of acute phthisis has set in, and the lungs are studded with miliary tubercles, recovery is impossible, I think that, in the pneumonic form of the disease, recovery may take place. The affection is essentially a scrofulous pneumonia, and as such may be amenable to treatment. Again, just as we see that cases of subacute and chronic phthisis, especially those which begin in so-called catarrhal pneumonia—for I cannot, as the result of my clinical experience, admit that all cases of subacute or chronic phthisis begin with the deposition of tubercle—get well, so I think we may hope that cases of a more acute form, although tubercular, may also recover.

Now let me draw your attention to the notes of the following case. Amy S., aged 16, was admitted into No. 15 ward on February 21st, 1877. It appeared that, up to twelve months before admission, she had enjoyed very good health. At that time, some dropsical symptoms appeared. Her abdomen began to swell.

Under medical treatment, the swelling subsided in about five weeks, and she remained well up to three weeks before entering the infirmary. On admission, she was suffering from ascites and œdema of the legs, unconnected, as far as could be ascertained, with any organic disease. Iodide of iron, and subsequently iodide of potassium, were administered, and the abdomen was painted with tincture of iodine. I considered the case as probably one of tubercular disease of the peritoneum, or else one of ordinary chronic peritonitis. By February 27th, the œdema of the legs had disappeared, and the abdominal swelling was less, but a fresh symptom now set in. She caught cold, and a cough came on early in March: and, on the 10th, she began to expectorate somewhat rust-coloured sputa. She was then ordered carbonate of ammonia and cascarilla, with four ounces of port wine daily. On March 12th, the following were the physical signs elicited by careful examination of the chest:—There was loud breathing, with moist sounds, at the left apex. There was some dulness, with crepitation and bronchial breathing, under the right clavicle, with dulness, but no crepitation or friction-sound at the right base. The breathing was rapid, and there was severe cough, especially on exertion. The pulse was quick, and the temperature high. I shall refer to these signs later on. On the 16th, in consequence of the dulness over the right base having extended, and as I feared there might be some fluid in the pleura, I punctured the chest, but no fluid was found. During the following week, the symptoms increased in gravity. The dulness over the right apex extended downwards, the crepitation became coarser, and appeared to indicate the the breaking up of the lung-tissue. On March 29th, the fluid had almost entirely disappeared from the abdomen, and the general symptoms were somewhat less severe, but there was no improvement in the physical signs. On April 7th, after the patient had been under treatment forty-five days and about five weeks after the lung-symptoms had set in, there were dulness and cavernous (?) breathing under the right clavicle, with dulness and crepitation lower down, and coarse crepitation all over the back. Throughout the case, the mischief in the left lung was confined to the apex. From about the middle of April, the patient began to improve, but it was not till near the end of June that she was able to be removed into the country.

Now, having referred to the physical signs—which were such as characterise acute pneumonic phthisis in its stage prior to the formation of numerous cavities—let me refer to the general symptoms. First of all, the pulse was very rapid; it varied from 140 to 120 in the earlier weeks, never falling below 110 till after the middle of April, namely, about seven weeks after the patient's admission.

And now with regard to the temperature; I wish particularly

to call your attention to this. The chart shows its variations You see that it maintained a high level for some weeks, but it had marked oscillations, being very high in the evening, and low, nearly normal, in the morning. You will observe that it was taken three time a day, namely, 9 a.m., 5 p.m., and 9 p.m., and that it was often found highest at 5 p.m. This, as you know, is a very frequent feature of the temperature in phthisis.

Thus we had in this case the characteristic high fever of acute phthisis; we had rapid consolidation of the apex of one lung, with indications of disease in the apex of the opposite lung; we had a steady extension of the disease, signs of the lung breaking up, and of the formation of a cavity, with great weakness of the patient. These symptoms lasted many weeks, and recovery was very slow.

On May 26th, the following physical signs were noted:—There was still dulness over the right apex with blowing sound, as of a cavity; over the right back crepitation was still heard. The pulse was quiet, and the temperature normal. The patient was removed to the Convalescent Hospital at Woolton about June 20th, and the physical signs at that time were as follows:—The respiration was almost natural at the base of the right lung; there was slight crepitation towards the middle of the lung. Breathing was somewhat bronchial at the upper part of the lung behind. In front, the breathing was loud and bronchial at the right apex, but less so at the left; otherwise, the sounds in the left lung were healthy. There was slight flattening at both apices, with deficient expansion.

The patient returned from the Convalescent Hospital on July 21st, greatly improved in health and general condition. Her physical signs were as follows:—There was some flattening under the right clavicle, with deficient expansion; resonance was somewhat impaired; expiration was prolonged; the breath-sounds were harsh; there was fair resonance over the back of both lungs, and the respiratory sounds were fairly good.

Now let me refer to the treatment that was adopted. When the chest-symptoms began, the patient was put on carbonate of ammonia and cascarilla, and for the latter cinchona was substituted on March 17th. On March 23rd, three grains of quinine in mixture were ordered to be taken three times a day; and, on the 26th, fifteen minims of tincture of digitalis were added to each dose. This treatment was continued until April 2nd, when iron and quinine were given. Subsequently, cod-liver was taken. From the date of her admission, and more especially when the lung-symptoms set in, nourishment was given very freely. It consisted of milk, beef-tea, and eggs, and solid food as soon as it could be borne; six ounces of port wine were also given daily from March 12th, and continued (except for three days from the 26th to the 29th, when four ounces of brandy were given) up to May 11th, when porter was ordered.

The case which I have thus presented is one of great interest. I think it belongs to the came class as that of which I showed you the temperature-chart at the beginning of the lecture ; that it was truly a case of acute pneumonic phthisis, or scrofulous pneumonia. It is very important to note the kind of treatment under which recovery took place, namely, free nutrition, and the administration of such remedies as tend to lower temperature and give strength.

I have had under my care a few other cases which have resembled acute phthisis, and which have recovered. I cannot give you to-day the details of all these, but I will refer briefly to one.

Margaret P., aged 33, a servant, was admitted into the infirmary under my care, on December 29th, 1880. She was suffering from symptoms resembling those of typhoid fever ; but there was cough and extensive subcrepitant *râles* over both lungs. The pulse was very quick, and the temperature high. Her condition was such that I hesitated in giving a diagnosis ; on the one hand I feared typhoid fever, and on the other acute tubercular phthisis. As the case progressed, the symptoms assumed more the character of the latter disease, and for some weeks the condition of the patient was very critical. We had evidence of extensive bronchitis, with some consolidation of the right lung. The pulse remained between 120 and 140. The temperature kept uniformly high, never, however, reaching a great height, and never falling to the normal. Its characteristics were those of the second form of acute phthisis, which I have referred to at the beginning of the lecture. The respirations were rapid, 40 to 52 in the minute, and the prostration was extreme. It was not till more than three weeks after her admission that the patient showed decided signs of improvement. From that date she steadily improved, and on April 17th she was sent to the Woolton Convalescent Hospital. I have not time to go into the details of her case, nor of one or two other similar cases which have been under my care. It must suffice to-day to say that in this case, and in the others, the treatment adopted was similar to that which was used in the case of A. S., namely—nourishment given freely, stimulants, and quinine.—*British Medical Journal, May* 29, 1886, *p.* 1014.

31.—ON SHOULDER-JOINT FRICTION AND INCIPIENT PHTHISIS.

By Angel Money, M.D., Assist.-Physician Victoria Park Hospital.

My object in this brief communication is to draw attention to a certain physical sign that not unfrequently leads to error. As the first physical sign of incipient phthisis is frequently a mere adventitious sound heard over some part of the apex of the lung, and as the friction produced in the shoulder-joint, by breathing, often imitates very closely these pulmonary adventitious sounds,

it is not difficult to understand how mistakes in diagnosis should occur. I think that there are good grounds for believing that lives are sometimes rejected at insurance offices, from a want of knowledge on this point.

The sound produced at the shoulder-joint is almost always of a dry quality, rather creaking than crepitation; but its character varies considerably. It is difficult to prevent its occurrence in those subjects in whom it is heard; so that fixing the joint hardly aids one much in the diagnosis. But the sound is always loudest over the joint itself, and is better conducted along the bones than along the muscles, over which it is usually faintly heard; but in some instances it may even be audible over the pectoralis major below the clavicle. An important point in the diagnosis is the character of the breath-sound at the apex of the lung; when mere joint-friction is heard, there is of course no prolongation or increased loudness of the expiration. This friction-sound, simulating pulmonary adventitious sounds, was first pointed out to me, and, so far as is known, was first drawn attention to, by Dr. Gowers, in his class of clinical medicine at University College. It is of frequent occurrence, and especially, I think, in patients who have suffered from "rheumatism." I have not heard it often in children, and less often in women than men. There can be no doubt that the practical physician must have become acquainted with the sound, even though he may not have formulated his opinion thereon. If this note should lead to its wider recognition, my end will have been answered.—*British Med. Journal, April* 24, 1886, *p.* 778.

32.—ON HOOPING COUGH AND ITS TREATMENT BY A NEW METHOD.—LOCAL APPLICATION OF RESORCINE.

By William H. Barlow, M.D., Consulting Physician to the Hospital for Sick Children, Manchester.

[In a paper of great length, and containing much of historical interest in regard to the parasitic origin of hooping-cough and its treatment, Dr. Barlow draws attention to the treatment of the disease by the local application of solutions of Resorcine, as recommended by Moncorvo, of Rio de Janeiro. A quite exhaustive résumé of all the methods of treatment based on the local parasitic view of the origin of the disease, is given, and then the writer proceeds as follows.]

All these experiences point in one direction, that of the parasitic origin of this disease; and all are more or less subject to one drawback, that when they are strong enough to be effectual as parasiticides they become injurious as irritants. It was this fact which led me so long ago to renounce the use of the most effectual among them, and it was this which led Professor Moncorvo, more happily, to that research which

induced him to employ the substance I have already named, and the discussion of which I am about to enter upon. It is a congener of carbolic acid, which, however, is free from the irritating qualities of that substance. This is Resorcine, a substance which fills a position in the class of aromatics very near to that of carbolic acid. Andeer and Callias and Dujardin-Beaumetz have borne witness to the remarkable effect which resorcine exercises upon the organic ferments, even in small doses; and indeed the latter assert its superiority to carbolic acid in that respect. There are also the advantages of the much greater solubility of resorcine, of its less caustic properties, of its very slight odour, and of its infinitely less toxic qualities—all which, together with the scarcely less important fact of its slightly sweet taste, combine to render it much more suitable as a topical application than carbolic acid. These properties had led Professor Moncorvo to employ it for internal administration in diarrhœa, dysentery, and other diseases of children, even infants at the breast, before he essayed its employment in hooping-cough. But he lays great stress upon the perfect chemical purity of the specimens of the drug to be employed, and he prefers to use it in an aqueous solution of 1 per cent., which is the strength that I have used. The first applications, which are made by means of a large camel-hair pencil or a swab to the supra-glottic portion of the pharyngeal lining, to the opening of the glottis and the pharynx, generally increase the violence of the chinks and their number; but that soon subsides, and in the course of one, two, or three days, the patients tolerate the application, and the chinks rapidly decrease in number. It should be applied at intervals of two hours, both night and day, unless the child sleeps, in which case it should not be disturbed. In his treatise Dr. Moncorvo gives thirty cases, and of eighteen of these he gives complete details; and in a further account in the *Archivio di Patologia Infantile* of Naples for the months of May, July, and September, 1885, he gives a further series of forty cases; many of these were complicated with bronchitis and broncho-pneumonia, and many also were in children with strumous or syphilitic cachexia. In no case was the complication a cause of any difficulty in the treatment, a statement in marked contrast with the use of carbolic acid, or other of the parasiticide reagents which have been previously mentioned. The last post from Brazil brought me a little additional treatise from the pen of the Professor, containing an account of his further trials, with the result of the application of solution of hydrochlorate of cocaine previously to the employment of the solution of resorcine.

The perusal of these pamphlets roused again in me my old interest in the question, and I made arrangements for the study of the disease and the effects of this mode of treatment. I collected

altogether in public and private practice 51 cases, or perhaps more correctly, 50; the odd one never arrived at the stage of hooping, and cannot therefore be counted, but it was a child of six months old, the brother of one of the children included in the list, in whom the hooping was fully established. He began to cough and continued to do so for several days before I saw him. When there was every appearance of proceeding in the ordinary course to hoop, the solution was well and carefully applied by the mother to both children; the elder, who was hooping every half-hour, was so far improved that the hoops fell to three or four in the twenty-four hours; and the younger, the child in question, lost his cough altogether, and never hooped at all. Thus, then, I only count 50 cases, of which I have given a list (for which see Lancet, May 22, p. 967), and from which I gather the following facts:— There were in these 50 cases 19 males and 31 females, clearly showing the predominance of the disease in the female sex. The ages showed under six months 5 cases, under twelve months 5, under eighteen months 4, under two years 6, under three years 10, under four years 5, under five years 8, under six years 4, and under seven years, 3. The length of time under treatment is: under two weeks, 2; under three weeks, 5; under four weeks, 11; under five weeks, 5; under six weeks, 8; under seven weeks, 10; under eight weeks, 2; under nine weeks, 3—total, 46: leaving 4 cases of which no account can be heard, but of which Mr. Mills, the assistant medical officer, reports that the probabilities are that they were cured: "I think you may say they are all cured; if they had died, I should have known about it." The total duration of disease is: under two weeks, 1; under four weeks, 2; under five weeks, 8; under six weeks, 3; under seven weeks, 4; under eight weeks, 5; under nine weeks, 2; under ten weeks, 4; under eleven weeks, 3; under twelve weeks, 3; under seventeen weeks, 1; under twenty weeks, 1; under twenty-two weeks, 1; under twenty-three weeks, 1—total, 46. Thus the average length of treatment, of the 46 cases of which we have an accurate account, is five weeks and a half, within a fraction; while the total average duration of the disease is eight weeks and a half; but it is extremely likely that both these figures would be reduced by the inclusion of the four cases which we are unable to trace. Dr. Charles West gives, from an observation of twenty-five cases, ten weeks as the average duration of the disease; but it is so extremely variable in its duration that this cannot be considered as otherwise than a very favourable calculation; and I am inclined to believe that the figures I have stated above show the effect of treatment, and that the true average is much higher than it is placed by Dr. West.

I have in the foregoing statistics given the bare facts, without any gloss or enthusiasm; I have placed no weight upon the

individual cases, many of which have been very markedly affected by the treatment, but have trusted to averages, and where there has been any defect of observation or of knowledge, have omitted them; but I think that we are justified in saying that there has been no fatality among these fifty cases, as had either of the four cases of which we have lost trace ended fatally, we should have heard of it at the dispensary. Yet there were several severe cases among them, complicated with bronchitis, broncho-pneumonia, &c., such as Nos. 4, 5, 14, 16, 18, 19, 29, and 36; and of great debility, as Nos. 15, 26, and 39 (the last being a case in which paracentesis thoracis had been performed for empyema eighteen months before, and where the wound remained open and discharged pus for over six months); or cachectic, as in Nos. 3, 31, 41, and 42. It is in these cases that this treatment seems to evince a decided superiority over most other modes, as it does not cause any irritation, and need not be intermitted for the purpose of allowing other forms of treatment to be carried on, nor does it interfere in any way with such treatment. I think, therefore, that these results justify the recommendation of Professor Moncorvo; and I have also, by the aid of the well-known skill of Mr. J. Broadbent, been enabled to corroborate the statements of the Professor as to the microscopic appearances and the effects of this treatment upon them. Thus, in the earlier specimens of expectorated matters that were submitted to microscopic examination, nothing special was to be seen; these specimens were from cases which had been for some days under the treatment, but in those which were taken from cases where the hoop was fully established, but which had not yet been submitted to treatment, the appearances are thus described by Mr. Broadbent: "Examined with one-twelfth immersion, with B eye-piece magnifying about 800 diameters, and the preparation stained with methyl aniline violet, it shows numerous nuclei of pus-corpuscles and some shreds of fibrinous material and a few epithelial scales. In some of the latter there are numerous small micrococci, arranged singly in chains and in groups (zoogloea); similar micrococci are also seen in other parts, but in much smaller numbers; the epithelial scales seem to be the chief seat of the organisms." This, it will be seen, exactly confirms the description of Professor Moncorvo.

In the light of this experience and these observations, we may then, agree with the following conclusions:—"1. That hooping-cough is to be classed among the diseases which are caused by the irritation excited by the presence of parasites. 2. That it is due to the presence of micrococci, which proliferate in large numbers upon the lining membrane of the larynx and pharynx, and which infiltrate the epithelial cells, which seem to be the preferential seat of their growth and increase. 3. That resorcine in a solution of

the strength of 1 or 2 per cent., applied directly to the mucous surfaces concerned, has been found, in all cases in which it has been employed, and the results watched, to rapidly reduce the number of chinks, to reduce their intensity, and finally to lead to the cure of the disease." This last word "cure" is a bold one, but if the first and second propositions are held to be proven, then there can be little doubt that it is properly used. For if there are no other diseases *cured*, yet certainly those which are due to the irritation of a parasite, are cured when that parasite is destroyed.

Lastly, the mode of application by means of a brush or swab is not the only mode in which it may be made; perhaps by some of the recently used instruments for applying medicated spray to the interior of the larynx and the adjacent parts of the throat (as that recently described by Dr. Miller, of Windsor, and by Dr. Hodgkinson), it may be applied yet more effectually than by the methods adopted by Professor Moncorvo and myself. And, again, it is not finally proven that resorcine is the best application that may be found. Perhaps in its near congener, orcine, we may have a still better agent for this purpose, for we find in a note by J. J. Andeer in the *Gazetta Medica Italiana-Lombardia* of July 4th, 1885, that "Orcine possesses almost all the physical properties of resorcine; but while the latter is caustic in large doses, orcine is never more than astringent and antiseptic." This seems to point the way to further experiments, but meanwhile I ask my readers to put to the proof the facts I have placed before them, and to make from them the deductions to which they lead. To guard against misunderstanding, I wish to add that, while sharing to a very large degree in the opinions so strongly asserted by Professor Moncorvo, I am not to be taken as denying that blood changes are an essential part of the pathology of this disease; nay, I am inclined to believe that some such changes are necessary to produce the peculiar pabulum for the parasitic germs, and that it is not improbable that some such change is a frequent result of attacks of measles and scarlatina, both of which evidently produce very marked effects upon the tracheal, bronchial, and pharyngeal lining.—*Lancet, May* 22, 1886, *p.* 966.

33.—TREATMENT OF WINTER COUGH BY PURE TEREBENE.

By C. W. Suckling, M.D., M.R.C.P., Co-Professor of Materia Medica to the Queen's College, Birmingham.

Upon seeing in the Journal for December 12th, 1885, Dr. Murrell's eulogistic account of the action of pure terebene in winter cough, under which name, I presume, he includes all cases of chronic bronchitis and emphysema. also cases of chronic phthisis, but not those cases depending upon heart-disease, I determined to

give the drug a trial in the Birmingham Workhouse Infirmary, where a great number of such cases are met with during the winter months. I had for some years previously frequently ordered terebene inhalations for the relief of urgent dyspnœa in these cases, but had never administered the drug internally. I accordingly prescribed pure terebene, obtained from Messrs. Southall and Co., the well-known Birmingham chemists, in 100 cases, giving five drops every four hours, increasing the dose to ten drops in a day or two, with the following results:—

Of the 100 cases, 94 were cases of chronic bronchitis, and 6 of chronic phthisis. Of the cases of chronic bronchitis, 68 were relieved; and 4 of the cases of phthisis, that is, 72 per cent. of all the cases were benefited. Several of the cases were "greatly" relieved. Twenty-eight patients were not relieved; 11 complained of nausea, 11 of headache, 10 of thirst, 2 of vertigo, 2 were purged, 1 complained of a burning sensation at the stomach, and 1 that he was always passing his urine. The symptom most constantly relieved was dyspnœa. The 72 patients benefited all saidthat the medicine eased their breathing, but many asked for medicine in addition to ease the cough.

I compared the above results with those obtained previously by our routine method of treatment, which consists in prescribing a mixture of ammonia and senega (℞. Ammoniæ carbonatis gr. iij; tincturæ scillæ ♏xv; tincturæ camphoræ co. ♏xv; infusum senegæ ad ℥ j), with the occasional addition of a few grains of iodide of potassium if expectoration were difficult, and of a small quantity of lobelia if dyspnœa were marked, many cases also being given cod-liver oil, the latter being, in my opinion, one of the most useful of all drugs in the treatment of chronic bronchitis. I collected the prescription papers of 100 cases that had been treated during the last few weeks before I commenced the terebene treatment. Of the 100 cases, 28 were discharged well, the chest being perfectly clear; 68 were discharged relieved, and 4 left the infirmary unrelieved. None of them complained of any ill effects of the remedies used.

The great majority of the cases treated in the infirmary were old people, who had suffered from bronchitis for years. Of course, the mere admission, from their wretched homes, of these patients, into warm wards, with good food and nursing, will account for a great deal of the relief given, but this holds good in the case of the terebene as with the other drugs given.

I am obliged to conclude, from my experience with terebene: (1) that it greatly relieves the dyspnœa of chronic bronchitis; (2) that it is very variable in its action, the same specimen causing good results in some, bad symptoms in other patients; (3) that it is by no means a specific for chronic bronchitis.—*British Medical Journal*, *March* 20, 1886, *p.* 541.

34.—DIGITAL EXAMINATION OF NASAL CHAMBERS AND DENUDATION OF THE TURBINATED BONES IN THE TREATMENT OF CHRONIC NASAL CATARRH.

By Harrison Allen, M.D., Professor Emeritus of Physiology in the University of Pennsylvania.

In the varieties of chronic catarrh in which the discharge is purulent or composed of crusts, the mucous membrane covering the middle turbinated bones will be found to be thickened and softened. In the atrophic form of the disease, the inferior turbinated bone will participate in this condition, and the entire interior of the nose may be lined with membrane which is so far changed from the normal type as to be scarcely recognisable by any of the characters which anatomists employ in its description. I have been for some time in the habit of studying these altered structures as though they were periosteum and bone respectively, and of being guided in their treatment by principles similar to those which are relied upon in treating the diseases of the periosteum and adjacent tissues. In a word, the nasal mucoperiosteum can be divided or removed, the bone can be scraped or excised with freedom, often with advantage.

In order to determine with an approach to accuracy the condition of the interior of the nose, it is well in all cases of chronic catarrh to make a digital examination. It is proposed to conduct the examination in the following manner. The patient being placed under the influence of an anæsthetic, the index finger is inserted into the nostril and by gentle pressure the tip is directed upward and backward in order to reach the plain of the level of the middle turbinated bone—a manipulation which is accomplished without difficulty. If the membrane covering the bone is in a healthy condition, the sensation to the finger is the same as though a firm yet resilient surface had been touched. If the parts are chronically inflamed, the membrane is much softer than in health, and is at once detached from the bone at the point of contact. By pushing the finger along the course of the bone the membrane is removed with ease. Should the bone be wedged against the septum, it can be forced out into a more favourable position; should it be found lying too far outward along the lateral wall of the chamber, it can be brought nearer the median line. The examination cannot always be completed without displacing the perpendicular plate of the ethmoid bone. The plate in many patients is not so thick as the vomer, and its ability to resist the pushing force of the finger is correspondingly diminished. The act of displacement is accompanied by a cracking sound, and the moderate resistance to the entrance of the finger to the plane of the sides of the middle turbinated bone is at once removed.

By the ordinary method of inspection the width of the middle turbinated bones cannot always be defined, but by the aid of the

digital examination here proposed the relative width can be easily made out. As a rule, the wider bone lies on the side toward which the perpendicular plate of the ethmoid bone is deflected. The disposition for one of the two bones to be of unusal size, occurs at my hands so frequently as to suggest the probability that an exceptionally large lateral mass of the ethmoid bone may act as a predisposing cause to chronic inflammation. It would appear that the large surface is placed at a disadvantage in flushing off excess of secretion; the parts remain for long times together unventilated, and the temperature of the region maintained at a point too high to be consistent with health. Occasionally the entire region of the lateral mass and the adjacent septum are matted together by the products of inflammation, which evidently have been the result of prolonged sequestration. The anterior free end of the bone should next receive attention. This portion is often found wedged tightly between the median and the lateral walls of the nose, and can be examined with difficulty. It may be necessary to employ a bone-scoop or chisel to scrape away the membrane covering the part, and even to remove by breaking down the firm nodule of bone which frequently constitutes the tip.

Next in order the lower plane of the nose should be explored. This part of the examination is the least satisfactory by reason of the fact that the bones are at this plane more resistant, and oppose the entrance of the finger to an extent which oftentimes prevents the operator making a complete digital search. Fortunately this region of the nose can be readily seen, and the difficulty, in truth, becomes a matter of minor importance. If the septum is found deflected, it is now an appropriate time to remove the spur or to effect any procedure which experience has shown to be useful. The mucous membrane adheres much more tenaciously to the inferior than to the middle turbinated bone, and is less easily detached.

The bleeding following the exploration is moderate in amount and is easily controlled. The simple examination, without accompanying employment of instruments, can be completed in a few moments. The amount of the anæsthetic required is no larger than is needed to extract a tooth or to incise a felon. In one instance only did any untoward event follow the introduction of the finger. An inflammatory swelling of the septum ensued which gave to the patient the sensations of a severe attack of coryza. The condition slowly yielded to repeated scarifications and rest.

In those cases in which the discharge is purulent and offensive, portions of the bone are found exposed and the mucous membrane lying in tags over extensively diseased surfaces. In such subjects the membranes are thicker than in health or in the chronic non-suppurative form of disease. The condition is confined to one side of the head.

The results of the manipulation have been most encouraging.

The denuded surfaces become covered with a normal membrane, the discharge is lessened in quantity and is less tenacious in character. Cases of the most pronounced type of fetid catarrh have so far improved after a single digital examination and denudation of the middle turbinated bones as to be further advanced than would have been the case if the manipulation had been omitted and a long course of local applications substituted. The treatment of each case after the denudation, is to be conducted on the same principles as have been generally accepted, and these need not be detailed in this place. The use of the electrocautery, the application of strong solutions of nitrate of silver, have now the happiest effect. Should the new membrane become tense and brawny, it may be occasionally deeply incised or small portions of the surface scraped by a bone-spoon or a chisel. It is submitted that the manipulation is an aid to the diagnosis of nasal affections, and that the act of denudation is a safe and useful procedure.—*International Journal of Med. Science, April*, 1886, *p.* 467.

35.—ON THE DIAGNOSIS OF NEW GROWTHS OF THE LARYNX.

By David Newman, M.D., Surgeon for Diseases of the Throat to the Royal Infirmary, Glasgow.

[In the course of two lectures upon the pathology and treatment of Tumours of the Larynx, Dr. Newman made the following useful remarks upon the diagnosis of laryngeal neoplasms.]

Of the general question of diagnosis of neoplasms of the larynx, the two points we have to determine are: first, Is there a tumour in the larynx? and second, If so, what is its nature? For diagnostic purposes, symptoms arising from functional disturbance are, when taken by themselves, not of much value; thus, we may have all the subjective symptoms of tumour present without the existence of a new formation; and, on the other hand, a neoplasm may occupy the larynx for years without revealing itself. It is only by a laryngoscopic examination that it is possible to be certain whether or not the laryngeal symptoms are due to the presence of a tumour. There are five methods which we may adopt in the diagnosis of tumour. These are: first, the employment of the laryngeal mirror; second, passing the laryngeal sound or probe; third, palpating the larynx externally, or passing the finger through the mouth; fourth, auscultation and percussion; and, fifth, microscopic examination of a portion of the growth removed by the endolaryngeal method. By the first method, namely, the laryngeal mirror, we can make out the relationship of parts, the situation, the colour, and the general appearances of the new formation; but, by the reflected image alone, it is difficult to estimate the consistency, or establish the situation and seat of origin

of the growth. For this purpose, we must employ the laryngeal probe or sound; by it, the insertion of the tumour may be precisely ascertained. Auscultation and percussion have both been employed in the diagnosis of laryngeal tumours; but the results are unsatisfactory, as compared with those derived from the methods I have just mentioned, and they are now seldom resorted to. Palpation externally may reveal facts of importance. By external manipulation, the relationship of the alæ of the thyroid cartilage, or of the cricoid and thyroid cartilages, may be ascertained; and infiltration or inflammatory enlargement of the lymphatic glands, as well as perforation of the cartilages by the tumour-tissue, may be discovered. If, in addition to palpation externally, the larynx be anæsthetised, and the finger be introduced into the upper part of the larynx, or fauces, points of considerable importance may be elucidated; the consistency, the extent, and the firmness of the attachments of the tumour to neighbouring parts may be ascertained, and the observations made by the laryngeal mirror and probe corroborated. To assist you in diagnosing the exact nature of a tumour, there is no method more certain than removing a small portion of the growth, and submitting it to microscopic examination.

Suppose, now, that you have ascertained to your satisfaction that a tumour occupies the larynx, what is the next point to be cleared up? It is this:—Is the tumour benign, or is it malignant? It is almost impossible to lay down any hard and fast rules for your guidance; and, while I attempt to do so, I trust you will bear in mind that the statements I make must be taken with certain reservations. The following circumstances are worthy of your attention, as distinguishing malignant from non-malignant growths.

In the former, especially in round-celled sarcoma and in soft cancer, the development of the symptoms and the growth of the tumour are rapid; whereas in the latter, as a general rule, the symptoms remain stationary, or nearly so, for a considerable time, often for years, and the increase in the bulk of the neoplasm is practically imperceptible. One exception to the slow growth of benign tumours is the papillomata, which, in many instances, grow with considerable rapidity. When the larynx is the seat of a benign growth, the mucous-membrane may be hyperæmic, or slightly thickened by chronic catarrhal changes, but is not usually otherwise altered in appearance; whereas, in malignant disease, especially in cancer, not only is the tumour ulcerated itself, but the mucous membrane is indurated, infiltrated with inflammatory products, and not uncommonly marked by erosions. Again, in cancerous disease, or when the larynx is occupied by a soft round-celled sarcoma, hemorrhage may be a prominent symptom, especially if the patient suffer from paroxysms of coughing. This symptom is

seldom present in non-malignant disease. Unless the larynx be the seat of prolonged and intense inflammation, enlargement of the lymphatic glands may be regarded as pathognomonic of cancer. In the sarcomata, the glands are not affected. Another symptom which makes one very suspicious of cancer is pain, at first limited to the larynx, but subsequently radiating to the ear and cheek and neck, on the affected side. In the early stages of the disease, it is, in many cases, very difficult to come to a definite diagnosis. This is especially the case in the sarcomata. Associated with these tumours, you have not the distinctive symptoms, subjective or objective, that you have in the carcinomata. The patient seldom complains of pain; there is rarely enlargement of the lymphatic glands, or ulceration of the surface of the tumour; but still the tumour is malignant, and the patient incurs almost as great a risk to life as if he were the subject of a cancerous growth. What means have we, then, of ascertaining with absolute certainty the nature of the new formation? At the last lecture, you saw me remove from the larynx of L. a small portion of the growth. This I did in order that I might examine it microscopically, and be quite sure as to its nature. This method should always be employed when there is any doubt respecting the histological characters of a tumour. It is a very simple operation, is practically devoid of danger; if the tumour be benign, it is but a step for its complete removal by the endolaryngeal method; if malignant, the sooner the fact is ascertained the better. Some growths which are homologous in their origin—for example, the papillomata and adenomata, may, at a later period of life, become heterologous, and develop signs of malignancy.

The diagnosis of intrinsic from extrinsic tumours is important, especially when we have to deal with malignant neoplasms—so important, that I will not apologise for repeating some statements which I have already made. By the term intrinsic, we mean to convey the idea that the growth is strictly limited to the laryngeal cavity. When this is the case, the prominent symptoms are aphonia and dyspnœa. The lymphatic glands are seldom affected; as a rule, cachexia is not a prominent feature during the earlier stages of the disease, and dysphagia is not a common symptom. In patients suffering from extrinsic growths, on the other hand, aphonia is not usually present at the commencement of the disease, and, indeed, there may be only slight alteration in the voice; while dysphagia is, as a rule, present as soon as the growth has reached any considerable size. Pain in the larynx and pharynx, extending round the neck and to the ear of the affected side, is more characteristic of extrinsic than of intrinsic new formations. In the former, the glands also are involved at an early period, and cachexia is usually pronounced.—*British Medical Journal, May* 1, 1886, *p.* 815.

DISEASES OF THE ORGANS OF DIGESTION.

36.—EXAMINATION OF THE GASTRIC JUICE AS AN AID TO THE DIAGNOSIS OF CANCER OF THE STOMACH.

By J. Dreschfeld, M.D., Physician Royal Infirmary, Manchester.

[Dr. Dreschfeld's main object in the publication of his paper is clearly to draw attention to the value of Van der Velden's observations on the absence of free hydrochloric acid in cases of cancer of the stomach. It is chiefly in Dr. Dreschfeld's first group of cases—cases where cancer of the stomach simulated either some general disease, or a disease of some organ other than the stomach—that the examination of the gastric juice has been of the greatest service to him. Numerous illustrative cases are narrated and referred to, and all the older methods of diagnosis dwelt upon. After referring in more or less detail, to *age*, *previous history*, *emaciation*, *vomiting*, and the presence of an epigastric tumour, he says :]

We thus see, that however valuable some of the symptoms are, there may be cases where the diagnosis of cancer of the stomach becomes a matter of very great difficulty. Van der Velden's observations on the absence of free hydrochloric acid in cases of cancer of the stomach, if found correct, would therefore form a most valuable addition to our clinical aids. These observations, together with the subsequent researches of Riegel, Ewald, Uffelmann, and others, have been ably reviewed in the columns of the Chronicle by Dr. McNaught, and I need not dwell on them at very great length. Some points, however, require elucidation. Van der Velden was the first to apply colour tests, and recommended watery solutions of methylviolet, tropæolin, and rosaniline, which, with free mineral acids, give peculiar colour reactions. Methylviolet is changed into blue, tropæolin into deep brown, and rosaniline is discoloured. Now, as hydrochloric acid is the only free mineral acid which is found in the gastric juice, we should thus have a ready means of recognising it if it occurs in the free state. Of the organic acids, lactic acid gives a similar change of colour if added to these aniline dyes; but this change of colour occurs only when the lactic acid solution contains more than 0·3 per cent. of lactic acid, a concentration in which lactic acid is very rarely found in the gastric juice. On using very dilute solutions of these colours I found (what has already been pointed out by Uffelmann and others) that methylviolet is by far the most delicate of these three tests, and equally delicate I found gentian violet. One part of hydrochloric acid in 4,000 parts of water is sufficient to change the violet into a distinct blue colour. Tropæolin solution (which in the presence of free mineral acid is changed into a deep brown colour) does not seem very constant in its composition, and while some samples proved highly sensitive tests, others failed to give the

reaction in very dilute solutions of hydrochloric acid. I have thus for some time only used methylviolet. A drawback which all these colour tests have is, that the presence of peptones (unless it occurs in small proportions, as I have found by many experiments) of albumen, and probably of some other bodies, such as phosphates, interfere with the test, and if these bodies be present no reaction ensues. I have therefore in many cases, along with the methylviolet, applied another test, recommended by Uffelmann and Kredel, namely, a mixture of alcohol, ether, and claret (unadulterated). (The proportions are 0·5 ccm. of claret, 3 ccm. of 90 per cent. alcohol, and 3 ccm. of ether.) This almost colourless solution of claret is rendered a rose colour by the presence of a minute quantity of hydrochloric acid, and this test is not interfered with by the presence of peptone or albumen. Lactic acid gives a similar reaction only when occurring in a more concentrated form. The mixture does not keep long, and has to be freshly prepared after a time. (According to Uffelmann an extract made of bilberries and mixed with amyl-alcohol is even more delicate, and is equally unaffected by the presence of peptone, but of this test I have no personal knowledge.) The presence of minute quantities of lactic acid is easily detected by a mixture of 20 ccm. of distilled water, 10 ccm. of 4 per cent. carbolic acid solution, and 0·10 ccm. of neutral 10 per cent. perchloride of iron solution. This fluid has a steel blue colour which, on the addition of the smallest quantity of lactic acid (1 in 8 to 10,000), gives a clear yellow colour. This solution also does not keep, and is best freshly prepared after it has stood a few days.

Now, Velden found that whilst in cases of gastric ulcer, chronic dyspepsia, &c., the aniline tests showed the presence of free hydrochloric acid in cancer of the stomach, no such free hydrochloric acid seemed to be present, and therefore no change in the colour of the reagent took place. Subsequent observers, such as Riegel, Ewald, Kredel, Justus Thiersch, &c., strongly confirmed Velden's observations. More recently Cahn and Mering have, however, shown that in the gastric juice of persons suffering from cancer of the stomach free hydrochloric acid is present, and if the methylviolet fails to show any, the cause rests in the presence of peptones, amido-acids, and other factors. While these observations show, as one might *â priori* suppose, that Velden's explanation as to the absence of free hydrochloric acid is untenable, yet the reaction itself, as shown by the result of numerous clinical observations, is of very great diagnostic value.

Since the publication of Velden's paper I have made numerous observations on a variety of cases, and I cannot speak too highly of the tests as a most valuable addition to our clinical aids.

The application of the test is by no means difficult. Certain precautions have, however, to be observed. If there is vomiting,

especially of somewhat clear fluid, not containing blood or undigested food, the vomited matter is filtered and tested as to its degree of acidity; and if then the methylviolet and the claret test show the reaction, we may almost with certainty assume that the case is not one of cancer of the stomach. But in such cases one should never be satisfied with the result of one examination, but repeat the examination several times. If the vomited matter do not give the reaction with the above-mentioned agents, we have to examine the gastric juice obtained by help of the flexible stomach tube. The gastric juice is best obtained either in the morning before any food is taken, or two to three hours after a light breakfast. If after the introduction of the tube no gastric juice is brought out, a small quantity of water may be introduced into the stomach through the tube, when sufficient juice will be readily obtained, the addition of a small quantity of water not materially interfering with the delicacy of the test. The gastric juice so obtained is filtered and tested for hydrochloric acid, and also for lactic acid by the perchloride of iron and carbolic acid test. The presence of peptones is also to be ascertained by using Fehling's solution.

Here also the examination has to be repeated at different days and at different times after ingestion of food, and if the methylviolet gives no reaction the presence of cancer of the stomachmay be assumed. (If the patient suffer from marked and continued pyrexia, or if there be amyloid degeneration of the stomach, the methyl reaction likewise fails; both conditions, are, however, very rarely found co-existing with cancer of the stomach.)

Besides in the cases given above, the application of this test has been found useful in cases belonging to the second group.

As regards the different forms of *nervous dyspepsia* and the persistent vomiting of hysteria there is little difficulty in their correct diagnosis, as there are a good many other neurotic symptoms present. Leube's test is here often a great help, not so much in distinguishing these cases from cancer of the stomach, but rather from chronic gastric catarrh. This test consists, as is well known, in examining into the digestive properties of the gastric juice. I have not followed Leube in injecting iced water into the stomach, as it is sometimes not well borne, and as it does not, after all, powerfully stimulate the secretion of gastric juice. I have been satisfied with examining the gastric juice obtained 5-6 hours after meals, when it was always found to contain free hydrochloric acid, occasionally also lactic acid; and I have then washed out the stomach, and found scarcely any undigested particles of food with the exception of some portions of fat. The gastric juice obtained before the washing out of the stomach was divided into three portions, to one of which was added HCl and to another pepsine, and all three examined, as stated by Leube, as to their digestive powers on fibrine.

Ewald examined a large number of cases of nervous dyspepsia, and he also found free hydrochloric acid in all his cases.

Cases of *chronic gastric catarrh*, if occurring in older persons, and when associated with vomiting, pain, and eructation, may simulate cancer of the stomach. The methylviolet test will here be a useful adjunct. It must, however, be borne in mind that repeated examination of the gastric juice, especially several (3-5) hours after a meal, or in the morning before any food is taken, is here necessary, for it may happen that the test, if applied only once or twice, and especially if the examination is made soon after food has been taken, may fail. This also seems borne out by Ewald's researches.

The same holds good for *simple chronic dilatation* of the stomach. In these cases the stomach must be thoroughly washed out, and the gastric juice examined two to three hours after the washing. In one case, however, even then the gastric juice gave no reaction with methylviolet, though all the symptoms showed that we had to do with a simple dilatation of the stomach, and the patient markedly improved and gained weight while under treatment.

It is in distinguishing *ulcer* from cancer of the stomach that the methylviolet test is most useful. No doubt, in a good many cases, especially when young persons are affected, the diagnosis of ulcer is easy enough ; when, however, we have to do with older people, when the typical symptoms of ulcer are less pronounced, when there is coffee-ground vomiting and great emaciation, then the differential diagnosis is by no means easy, especially when we consider that occasionally cancer may become implanted on an old ulcer. In these cases the methylviolet test has always given satisfactory results. In six cases of ulcer of the stomach free hydrochloric acid could be demonstrated easily in the gastric juice, and in four the vomited matter also showed it occasionally.—*Medical Chronicle, June* 1886, *p.* 179.

37.—ON THE ABUSE OF DIETETICS IN DYSPEPSIA.

By W. H. Broadbent, M.D., Physician to St. Mary's Hospital.

There are numbers of people, both men and women, but chiefly women, who begin by having pain in the epigastric region, at a variable interval after eating, pain, associated or not with flatulence. This is attributed to some particular article of diet, which is dropped, with perhaps temporary suspension of the discomfort. The pain, however, soon returns, and after a number of experiments medical advice is sought. It is not uncommon for the medical man to take the same view of the case as the patient, and a scale of diet is laid down with great minuteness, adopting perhaps all the sufferer's restrictions, and adding more, which is observed with all the greater scrupulousness the more stringent its injunctions, and obeyed all the more readily because the appetite

is wanting. I have known this to be done even when neuralgia was crying aloud for more and better blood to be sent to the nerve centres. There are still discomfort, and a sense of repletion after food; and the patient, considering himself to be in possession of the secret of his cure, improves upon the instructions given him, and the list of permissible foods is still further cut down, till starvation point is almost reached, or acute illness puts an end to the dieting. I have seen such documents with the pen run through one article after another of those permitted by the medical man; and a case came before me in the spring, in which the only food taken was soaked biscuit, and this, not by a hysterical girl, but by a mother who was devoting all her energies to the care of her family. The aggravation of the pain, which had from innutrition become severe gastro-enteralgia, was attributed to the obstinacy of the indigestion, and I was expected to suggest something still more simple in the way of food. It was with difficulty that the patient was convinced of the connection between her increasing suffering and her diminishing nourishment; but, this done and the requisite measures adopted, she gradually recovered. I cannot say that fatal results of such treatment have come under my notice, but I have met with many instances in which it has led to great weakness and suffering in the individual, and serious interference with the comfort and welfare of families. The energetic wife and mother has become a fretful invalid, migraine has been aggravated, other neuroses developed, in one case, the most severe anginoid paroxysms, and all capability of useful work has been lost. Sometimes an acute attack of illness supervenes, during which liberal nourishment is insisted upon, and the patient gets up comparatively well. The illness in such cases gets the credit of improvement in the general health, which is really due to the food given during its continuance and during convalescence.

A variety of this dyspepsia, of which I am speaking, is the winter-indigestion of women and weakly men. As cold and damp weather sets in, there are many persons who begin to suffer from pain after eating, and flatulence; or these symptoms may not set in till later in the winter, when the cold and short days have reduced the vital powers. Very frequently, the connection between the indigestion and the season of the year is not recognised, and the subjects of it simply look upon themselves as liable to dyspepsia, which they associate with certain articles of diet, instead of with the winter, or attribute to want of exercise and fresh air. As is well known, however, cold, and especially cold with damp, will inhibit digestion, sometimes so completely, that a hearty meal, eaten with avidity after a cold drive, will be vomited almost unchanged hours afterwards, but this takes place more frequently in a minor degree, sufficiently to give rise to discomfort, and a sense of distension, or the cold will inhibit the hepatic functions, and cause constipation.

Now in all such cases, it is not the food which disagrees with the stomach, but the stomach which disagrees with the food; and the appropriate treatment is not levelling down the nourishment to the digestive capacity of the stomach, but the bringing up of the functional energy of the stomach to the requirements of digestion, by extra food of a stimulating character, such as beef-tea, or an egg-flip between meals, by stimulants at meals, and by tonics. So with regard to winter indigestion; winter is not the time for cutting off food, when it is required in larger amount to neutralise the influence of external cold. What is wanted is protection from the depressing influence of cold, or the means of neutralising it.

It is quite true that most people eat far too much, and, again, that with regard to the stomach, as well as to all other organs and parts of the body, the principle of functional rest is of primary importance in dealing with disease; and restriction of food, and even temporary starvation is often necessary; but we must distinguish, and not starve those who are suffering from inadequate nourishment, or employ treatment for catarrh, or ulcer, or organic disease, when nothing of the kind is present.—*British Medical Journal, Aug.* 14, 1886, *p.* 313.

38.—ON PAPAIN AND ITS USES IN DYSPEPSIA.

By Geo. Herschell, M.D., Physician to the Farringdon Dispensary.

For some time past, a drug has been before the medical world, called papaïn, which claims to be able to replace pepsin and pancreatin in medicine, but, for several reasons, has not come into use. It is a powder, and is prepared from the juice of the *Carica papaia*, or melon-tree. There are at present two chief varieties of this drug on the market; namely, that sold by Christy, with which most of the experiments up to recently have been made, it having been before the profession some considerable time; and a papaïn quite lately introduced into this country, and prepared according to the process of Professor Finkler, who occupies the chair of physiology at the University of Bonn, and who for the last few years has been experimenting with the digestive ferments. This latter (papaïn, Finkler) is likely to prove of considerable use, as it is without the imperfections which have prevented papaïn (Christy) from doing so. In the first place, it is cheaper; in the second, it is less energetic. This we shall show to be a *sine quâ non*.

I will commence by an account of its properties as determined by Professor Finkler, which will advantageously compare with those of pepsin and pancreatin. 1. It digests equally in acid, alkaline, or neutral fluids, best of all in water. 2. It will dissolve 1,000 times its own weight of fresh blood-fibrin. 3. Its action is increased by the presence of pepsin and pancreatin. 4. It acts at the temperature of the body. 5. Meat infused with a solution of

papaïn keeps, while undergoing a softening process, much longer than it does without it. From this, it can be inferred that it has an antiseptic as well as a peptonising action. 6. The product of its action is a pepton, which, from its properties, may be taken to be Meissner's *c* pepton. 7. Papaïn adheres to albumen to such a degree as to prevent its being removed by protracted washing with water. 8. Papaïn, in contrast to pepsin, acts when the resulting pepton-solution is highly concentrated. 9. The addition of antiseptics, such as salicylic or carbolic acids, does not interfere with its action. Hence, in papaïn (Finkler), we have apparently an ideal digestive ferment.

I will now pass on to consider the difference in properties of papaïn (Christy), and papaïn (Finkler). In experimenting with them, and comparing the results, it appears at first sight that the former is much more energetic than the latter; but, on further investigation, it will be seen that this apparent virtue really unfits it for internal use, inasmuch as, not content with converting the fibrin into pepton, it again splits it up into bodies soluble in alcohol, and analogous to leucin and tyrosin, which, so far from being of any use in digestion, are absolutely injurious. It is therefore evident that the chemical and medicinal results must be kept apart.

If ·01 gramme of papaïn (Finkler) be placed with 10 grammes of fresh blood-fibrin, and 50 cc. of water, at 45° to 50°C. (113 and 122 Fahr.), and put into an oven of the same temperature, the solution takes place in from forty-eight to eighty hours. If, on the other hand, papaïn (Christy) be used instead, in the same experiment, the solution takes place in a much shorter time. But here an important distinction comes in.

If to the result of each experiment be added 10 grammes of fresh blood-fibrin, it will be found that the papaïn (Finkler) will still dissolve this in twenty hours, while that containing the papaïn (Christy) will not dissolve at all. This proves that the former is a true catalytic ferment, and that the latter is not. An alcoholic extract of the latter will also show the presence of the leucin and tyrosin-like bodies by the usual tests. These experiments are easy, and anyone can make them for himself without any very special apparatus.

Dr. Finkler states that he can prepare a papaïn identical in its action to that of Christy, by a different method. I have received a sample, and find it identical in its action with that of Christy. He has discarded this method in favour of that which he now uses, and which produces a papaïn, whose initial action is less energetic but is indefinitely prolonged. It is this papaïn (Finkler) which I have been for some time prescribing, and with which I have obtained very satisfactory results in cases of dyspepsia.

I find it chiefly valuable in the following classes of cases:

1. *Chronic Stomach-Catarrhs of Children.*—Everyone of us is familiar with that state in which we find children at times, and

which is very frequently called "biliousness." It is characterised by loss of appetite, langour, pasty complexion, loss of sleep at night, and irritability during the day. There is frequently frontal headache, and the urine is loaded with lithates. If this state continue for any length of time the child emaciates, the unhealthy mucus which sheathes the stomach and intestines preventing the due absorption of the food. Cod-liver oil and compound syrup of the phosphates, which are generally given for this complaint as soon as the child begins to lose flesh, are not assimilated. Sometimes a cough develops, and the child is supposed to have incipient phthisis. I have found these cases rapidly improve with the following prescription:—℞. Papaïn (Finkler), gr. ½.—gr. j; sacch. lactis., gr. j; sodii bicarb., gr. v. M. To be taken after every meal. It is also advantageous to give a drop or two of tincture of nux vomica immediately before the meal in a little water. The papaïn probably acts by dissolving the mucus, and thus facilitating the absorption of the food.

2. *Acid Dyspepsia.*—This drug is extremely valuable in this form of indigestion. *a.* As it acts equally well in the presence of an alkali, a sufficient quantity of bicarbonate of soda may be given with it to neutralise the excess of acid in the stomach without impairing its peptonising power. *b.* Its antiseptic action checks the abnormal fermentation to which much of the accompanying flatulence is due. *c.* An antiseptic can be given with it to increase this action. I usually order it in the following manner:—℞. Papaïn (Finkler), gr. ij; sacch. lactis, gr. v. M. To be taken an hour after meals with the following draught:—℞. Sodii bicarb., gr. xv; glycerin. acid carbolic, ♏ viii; spirit. ammon. aromat., ♏ xx; aq. ad ℥ iss. M. Fiat haustus. It appears that, taken one hour after a meal, a smaller dose of papaïn is required to produce the same result than if taken with the food.

3. *Cases where Severe Gastric Pain coming on shortly after Eating is the prominent symptom.*—I have tried the drug upon twelve cases of this nature. Complete relief was given in ten, one case was partially relieved, and one completely failed to derive any benefit.

Apart from its internal use, papaïn will probably come into extensive use as a peptonising agent, to prepare ready digested food and enemata in the way in which pancreatin and pepsin are used at present.—*British Medical Journal, April* 3, 1886, *p.* 640.

39.—SOME REMARKS ON INFANT FEEDING.

By Hy. Ashby, M.D., Physician to Children's Hosp., Manchester.

The most striking difference at the various periods of lactation consists in the greater richness of the colostric milk in albuminous materials and salts, these constituents becoming lessened as lacta-

tion advances, while the amount of sugar of milk becomes notably increased. The differences between human and cows' milk will be seen to be that the amount of curd and salts is much greater in cows' than in human milk, while the amount of sugar is less. In cows' milk, on an average, there is from four to five per cent. of curd, while in human milk the amount of curd is only about one to one and a half per cent. (Pfeiffer, Meigs), so that cows' milk is about four times as rich in casein as human milk, while the amount of salts is some three or four times as much, and the amount of sugar in human milk is half as much again as in cows' milk. The usual plan to render cows' milk as nearly like human milk as possible is to dilute it in varying proportions, and to add sugar; but the difficulty at once presents itself in that if it be diluted 1—4, to reduce the amount of curd to one per cent., the resulting mixture will be exceedingly poor in fat as well as sugar, the salts alone being in normal proportion. If, on the other hand, less water is added so as to retain a larger amount of fat, there will be an excess of curd, which the infant may not only fail to digest, but may produce diarrhœa or other troubles. But besides this difficulty, the curd of cows' milk differs both physically and chemically from the curd of human milk. Cows' milk, even when diluted and rendered alkaline, on being coagulated, precipitates the casein in lumps, which tend to run into a ball during digestion, and it is coagulated by dilute acids, both vegetable and mineral. Human milk, on the other hand, is not precipitated by dilute acids, nor so quickly as cows' milk, and the precipitate of casein falls in gelatinous flocculi instead of in firm curds. The hard curdy precipitate from cows' milk resists artificial gastric juice for many hours, whilst the soft flocculi from human milk are quickly dissolved by the digestive juices. It has frequently been asserted that this tendency to precipitate the curd in firm lumps, which distinguishes cows' milk, can be corrected by the addition of lime water, barley water, or a fluid containing dextrin or some other gelatinous substance. This has been shown by Biedert to be a mistake. In order to submit this question to an experimental test, I took three test tubes, No. 1 containing 1 cc. of milk and 1 cc. of water; No. 2, 1 cc. of milk and 1 cc. of lime water; No. 3, 1 cc. of milk and 1 cc. of Mellin's food (1—5). To each, 1 cc. of an artificial gastric juice was added, sufficient acid at the same time being added to Nos. 2 and 3 to neutralise the alkali which they contained. The curdy precipitate which formed was in all cases exactly alike. They were placed in an "incubator," and maintained at a temperature of 105° F. for twelve hours, additional artificial gastric juice being added at intervals. At the end of twelve hours the amount of curd, which had been reduced to a ball about the size of a pea; was practically similar in each. Such experiments are essentially rough, but they show without doubt that the curd

of cows' milk is precipitated in the same form, whether the menstruum is gelatinous or alkaline, or only water has been added. There is one caution to be borne in mind—the fluids during coagulation must be left at rest; if shaken up, a much finer diffuse precipitate results. In marked contrast with these results are those obtained with milk which has been partially pancreatised. Thus, when 2 cc. of pancreatised milk, made by adding "pancreatine" and carbonate of soda to a mixture of half milk and water, and allowed to stand for ten minutes, was placed in a test tube, and 1 cc. of artificial gastric juice added after being neutralised, a fine flocculent precipitate fell, which, after remaining two hours in the incubator, was completely dissolved, the resulting liquid being clear, with a stratum of fat on the top; this, when agitated with ether, became almost clear, there being hardly any precipitate remaining undissolved. We have, then, a method by which cows' milk can be rendered in several important respects very similar to human milk. Lime water and Liebig's food (Mellin) have their value, the former in neutralising an excessive acidity of the stomach, and the latter in supplying carbo-hydrates in the form of maltose and dextrin, but the curd which forms in their mixtures with milk is just as hard and rebellious to gastric juice as if the milk had been simply diluted with water.

Peptonised milk is most readily prepared for infants by pouring 4 oz. of boiling water on 4 oz. of milk, adding one-fourth of one of Benger's peptonising powders, two teaspoonfuls of cream, and allowing it to stand for ten or twenty minutes, according to the amount of peptonising desired, then adding a teaspoonful of sugar or milk sugar, and letting the infant take it at once. The amount of milk taken will vary, of course, with the age of the infant, but the proportion of half milk and water is the best. Most infants will take this form of food very well, and there is no need to hurry over the meal, as the milk does not readily become bitter. There is no need to boil unless the milk is required to be kept for some hours. Infants, especially weakly ones, will pass curd in their stools while taking this food, and it is not possible to pre-digest all the curd, but the curd passed is always soft, and not like the hard, lumpy, curdy stools of children fed on pure milk. This method of peptonising milk is extremely simple, and gives very little trouble. It is, however, unfortunately somewhat expensive, and can hardly be resorted to in the poorer classes of practice.

Many other forms of foods have been devised, but one of the best known, and one which has the advantage of having stood the test of time, is the "cream mixture," which was originally suggested by Biedert, and which consists of varying proportions of cream, water, milk, and sugar, the amount of milk varying according to the digestive powers of the infant. For a newly-born infant, or one suffering from gastric or gastro-intestinal catarrh,

no milk is added, the curd contained in the cream supplying the nitrogenous constituents. The following table shows its composition:

Cream.	Water.	Milk Sugar.	Milk.	Casein.	Fat.	Sugar.
Litre.	Litre.	Grammes	Litre.	Per Cent.	Per Cent.	Per Cent.
I. $\frac{1}{8}$	$\frac{3}{8}$	15	0 =	1	2·5	3·8
II. ,,	,,	,,	$\frac{1}{16}$ =	1·4	2·7	3·8
III. ,,	,,	,,	$\frac{1}{8}$ =	1·8	2·7	3·8
IV. ,,	,,	,,	$\frac{1}{4}$ =	2·3	2·9	3·8
V. ,,	,,	,,	$\frac{3}{8}$ =	2·6	3	3·9
VI. ,,	$\frac{1}{4}$	10	$\frac{1}{2}$ =	3·2	2·8	4

In making the first mixture we shall not err very greatly from the original if we direct that a $\frac{1}{4}$ pt. of cream be mixed with $\frac{3}{4}$ pt. of warm water and $\frac{1}{2}$ oz. of milk sugar be added. To this two to ten ounces or more of milk may be added, according to the age or the infant's capacity for the digestion of curd. This form of food is often of service, has the great advantage of simplicity, and will often be found to agree when the infant is suffering from vomiting and diarrhœa, the stools being loose, green, or yellow, and containing much undigested curd. Various modifications will suggest themselves, such, for instance, as using barley water instead of simple water, or the addition of dextrin and maltose, such as exists in Liebig's (Mellin's) food. In a sense it is unphysiological to feed infants under six or seven months old on any form of carbo-hydrate but milk sugar, but in the majority of cases it will be found that dextrin and maltose are well digested by the smallest infants, who thrive correspondingly upon them.

Any one of the above forms of food will generally be found to agree well with a healthy infant, or when it is suffering from dyspepsia or intestinal catarrh. Many infants will thrive on diluted cows' milk from the very first, in spite of the excessive amounts of curd it contains. They appear to thrive well because they have either exceptionally strong digestive powers, or pass large masses of undigested curd through their bowels without any effort and without trouble. But with most of them a time comes when they suffer from colic, or diarrhœa, or vomiting, and some other food must be found, at least temporarily, to relieve them of the excessive calls on their digestive powers. Many other children utterly fail to digest cows' milk, and have to seek relief in weak condensed milk, or some of the patent foods. For such, peptonised milk, or one of the artificial human milks suggested above, will be found in most instances far better substitutes for human milk than either condensed milk or patent foods.—*Med. Chronicle, May, p.* 112.

40.—TREATMENT OF A FORM OF DIARRHŒA IN CHILDREN.

By James Braithwaite, M.D.Lond., Obstetric Physician to the Leeds General Infirmary.

There is a form of diarrhœa in children, usually occurring after weaning, and from that period to four or five years of age, which is characterised by the most horrible offensiveness of the motions. This is so marked, that it is generally at once mentioned by the parents. It is commonly met with in summer, but is not strictly what is known as infantile diarrhœa, in which disease the stools are sour, but not necessarily fetid. Probably this form of diarrhœa differs from the diarrhœa of younger infants, in being caused by the growth of the ordinary bacteria of putrefaction. It is not amenable to treatment by any astringent, nor has any alteration of diet much effect upon it.

It may, however, be successfully treated by disinfecting the bowel contents by means of salicylate of iron, as in the following prescription, which is suitable for a child two years of age:—Sulphate of iron ℈i; salicylate of soda ℈i; glycerine ℥iij; water to three ounces. The iron and the salicylate should be dissolved separately, and the solutions mixed. The colour is darker than port wine, and the taste not unpleasant. One teaspoonful must be given every hour, until the stools become well blackened, which happens in about twenty-four hours; or a larger dose may be administered at longer intervals. The medicine should then be given every three or four hours, and occasionally a small dose of castor-oil, to clear the bowels well out, and to get the secondary constipating effect of the oil.

I have employed this mode of treatment for many years. It was one result of a long series of microscopic observations upon the action of reagents upon the bacteria found in putrefying animal fluids, which I read before the Leeds and West Riding Medico-Chirurgical Society eleven years ago. The addition of the salicylic acid to the iron I made more recently.

In hospital practice, and amongst the poor, it is not so successful as it would be if it were possible to remove the child from the family living room, the air of which is usually very impure, and is made worse by the smells incidental to cooking, and the presence of a sink.—*British Medical Journal, July* 17, 1886, *p.* 107.

41.—THE PROPHYLAXIS AND TREATMENT OF TAPEWORM.

By James T. Whittaker, M.D., Medical College, Ohio.

The subjection of meat to a boiling temperature throughout, which effectually destroys all cysticerci, is the chief preventive of tapeworm. The recognition of this fact with regard to the trichina spiralis has already diminished the number of cases of tænia

armata. Cleanliness is the factor of next importance. The oriental custom of ablutions before each meal may be commended in this regard. Individuals affected with the disease should be enlightened as to the fact that they are possible sources of infection of others. Bettelheim speaks of having seen in a house of poverty and squalor segments of tapeworm deposited on and crawling about the floor, furniture, and beds. Butchers, cooks, all persons employed in the preparation and distribution of meats, should be cautioned as to the necessity of cleanliness of hands, instruments, vessels, and clothing. To prevent infection of animals with eggs, habits of decency in regard to the deposit of fæces should be enforced, and check should be put upon the barbarous custom of promiscuous defecation. A Texas physician informed Prof. Leidy, to whom he had sent a piece of measly pork for examination, that all the pigs in the place were thus affected, and that there was not a privy in the whole village. In the administration of anthelmintics to the subjects of the pork tapeworm, selection should be made of such remedies as will not cause vomiting. Especial attention is to be paid in this regard to the relief of the vomiting of pregnancy. Physicians, as well as patients, need repeated injunction against the careless handling of tapeworms in their examinations. Specialists who have devoted a large part of their lives to the study of intestinal parasites become exceedingly careful in their manipulations. Küchenmeister states that he always handles tapeworms with two pairs of long forceps, seizing them as near the points as will secure firm purchase; and Cobbold warns against the danger of leaving specimens about or carelessly throwing them away, with the emphatic injunction to destroy them by fire.

The Greek and Roman physicians possessed sixty remedies for the cure of tapeworm, and the number has been greatly increased in our day. But few of these agents, however, have stood the test of time. Such uncertainty has attended the use of most of them as to have left the treatment of the condition a fertile field for quacks. This uncertainty depends, however, upon the lack of observance of a few simple precautions, the chief of which consists in the evacuation of other contents of the bowels as effectually as may be, that the remedies used may come in direct contact with the worm. Elaborate preparatory and supplementary treatment is now in the main superfluous, but a light diet during the day, or, better, a fast, broken only by a cup of coffee or a glass of milk, should precede the administration of the remedy selected. These remedies may be ranked in efficacy as follows:—

1. The bark of the pomegranate root, of which three ounces should be macerated in twelve ounces of water for twelve to twenty-four hours, to be then reduced one-half under gentle heat. The whole quantity is to be taken in divided doses in the course of

an hour. Pomegranate root remains the most effective of all anthelmintics, and would long since have excluded all others did it not at times produce nausea, vomiting, and colicky pains. To avoid the first of these evils, Bettelheim suggests the introduction of the infusion into the stomach by means of the stomach pump, and to obviate all of them, Feraud recommends pelletierin, an active alkaloid of the root named in honour of the discoverer of quinine. One to two drachms of the infusion of senna is to be taken on the morning following a day of fasting, and in the course of an hour one-fourth to one-half of a grain of the tannate of pelletierin suspended in water. Half an hour later the same dose is repeated, to be followed in an additional half-hour with a tablespoonful of castor oil, the patient remaining meanwhile quiet in bed, to avoid disturbance of the stomach. In one instance twelve beef tapeworms were expelled at once in this way.

2. Turpentine is a powerful tæniacide, but the use of it is liable to cause headache, pain in the stomach, fever, and strangury. These effects are, however, much less frequent after large than small doses. Hence, the dose for an adult should never be less than one to two ounces, for a child, one drachm to one ounce according to age. It may be administered in emulsion with white of egg, or be briskly stirred in half a glass of milk and swallowed rapidly. Should it fail to act as a cathartic, it should be followed with a dose of castor oil.

3. Male fern, the ethereal extract, two drachms in four or five gelatine capsules, of which one may be swallowed every five minutes with the aid of a cup of coffee. A dose of castor oil with brandy should follow the capsules in the course of half-an-hour.

4. Kousso, koussin, pumpkin seeds, santonin, kamala, carbolic acid, zinc, and other parasiticides of less value.

Every attempt at treatment being a forcible intervention, only such individuals should be subjected to it as are known to be affected. The mere statement of a patient is not sufficient proof, and cases of tæniaphobia do not justify it, on so-called psychological grounds, because failures only aggravate the condition as a rule. Pregnancy, advanced age, debility from any cause are contraindications to all treatment. The physician must be awake to cases of deception. Heller reports the case of a child finally debilitated by repeated treatment because of the continued exhibition of segments of the worm, when, upon closer examination, it was discovered that the fragments did not come from the child at all, but from a lazy nurse who made a convenience of the child's stool chair.

Echinococcus cysts are not amenable to relief by internal medication. If further evidence than the failure of every kind of drug were necessary to prove this fact, it may be found in the

statement of Leidy, who discovered in the body of an English sailor, sent to him for dissection, the tissues having been thoroughly bleached by an injection of zinc chloride several days after death, a hydatid tumour of the size of the fist in the right iliac region full of daughter cysts, containing still living scolices. The most approved method of treatment of hytatid tumours is by aspiration of their contents. Murchison reported, of forty-six cases thus treated, thirty-five successful results. In ten cases subsequent suppuration necessitated incision, whereby eight cases recovered, and two died. The remaining case died of acute peritonitis in twenty-four hours. Fogg, Hilton, Durham, and Handfield report nine cases cured by electrolysis. Jonasen, of Iceland, still adheres to opening by the caustic method of Récamier. The rare form of degeneration known as the multilocular cyst is always fatal.—*Philadelphia Medical News, Sept.* 1886, *p.* 310.

42.—ON AN UNRECORDED DANGER FROM CONTINUED LARGE DOSES OF IRON.

By J. Strahan, M.D., Belfast.

Intestinal concretions of various kinds have been described: concretions of magnesia, of cocoa-fibre, of oatmeal, and hosts of other substances bound together by mucus, which probably exists in too large quantity when such concretions form; that is to say, a state of intestinal catarrh assists the formation very much. Mr. Treves, in his Intestinal Obstruction, gives many curious cases of obstruction by intestinal concretions of magnesia and oxide of iron, which the patient had been in the habit of taking; but he says that such rarely occasion sudden occlusion of the bowel, that the symptoms are distinctly chronic. This is the only mention I can find of iron as an obstructive agent, and what I have to record differs altogether from the cases described by Mr. Treves.

Dr. J. C. Thorowgood (Medical Times and Gazette) shows how bismuth can cause obstruction, but he merely gives us *post-mortem* appearances, and not the symptoms during life. He says that subnitrate of bismuth has been given in such quantity that, after death, large, hard, black masses of concrete sulphide of bismuth have been found blocking the intestine, and resembling lumps of metal.

There can be no doubt about the usefulness of large doses of iron in many different states and disorders. Mr. de Morgan, at the Middlesex Hospital, gave at least one, or one and a half, drachms of tincture of iron daily, sometimes as much as one and a half to two ounces, for erysipelas. He speaks highly of it in these doses, saying it reduces the duration to from two to four days, instead of from seven to ten. Dr. Squire gives as much as half an ounce of the tincture daily in diphtheria to young children, and much more

to adults. It often happens that anæmic people are also dyspeptic; have a pale, teeth-indented tongue, nausea, vomiting, and even pain after food. This dyspepsia is dependent on the anæmia, and it is wonderful how such stomachs bear large doses of the chloride and sulphate. It is the best and quickest way of cure for both dyspepsia and anæmia, but I think it requires a precaution which I shall explain presently. Large doses of iron act as an immediate stimulant, rapidly remove anæmia, remove gastro-intestinal catarrh, renew appetite and digestion; but, unfortunately, if continued more than a week or two, they cause a gastro-intestinal catarrh of their own, and, if this be not attended with diarrhœa, or if a purgative be not given, serious symptoms may ensue.

The preparations I have found to cause symptoms of obstruction are as follows, namely: Ringer's pill of 5 grains of dried sulphate of iron = 9 grains of ordinary sulphate; half-drachm and whole drachm doses of tincture; mistura ferri composita, P.B., made so strong as to contain 8 or 10 grains of sulphate of iron and carbonate of potash in each dose. Any of these, if given three times, or even twice, daily, for from one to two weeks, and if natural or artificial diarrhœa do not in the meantime wash out the quantities of insoluble sulphide, will cause severe colic and constipation, which morphine and turpentine stupes seem unable even to alleviate, and which, it seems to me, would continue indefinitely, or till death, if not removed by a smart saline purge, or other means. I have seen twenty-four hours of rhythmic agonising pain, very like labour, with nearly constant vomiting, no sleep or ease, after a grain of morphine by the mouth, the temperature rising to 101° Fahr., and a great depression of all the powers of life, from a couple of weeks' course of Ringer's pills, which had done immense good to the system at large. This has not occurred once only, but dozens of time, so that I now expect it, and provide against it. As soon as ever a large dose of any saline—I prefer an ounce of sulphate of magnesia—has well acted, all symptoms rapidly disappear. At this time, and for twenty-four hours after, the stools seemed composed half of dirty water and half of black sand. I think this latter fact explains the pathology of the matter. In fact, it is a real obstruction—an acute one, too—by quantities of insoluble sulphide of iron. The quantity of this black sand, which comes away when severe constipation and colic have occurred, is surprising. It seems to be much more in quantity than the whole iron ingested, although the stools have been jet black all along, through excreting the sulphide. So, it seems to me, it must lodge somewhere; perhaps in the cæcum and appendix. Then when the iron begins to sicken the patient (gastric catarrh), the sulphide, I suppose, concretes by mucus, and forms an obstruction which brings matters to a crisis. The length of time that a patient can take large doses of iron, depends on the state of the bowels;

if they be kept, or remain, slightly loose, he does not suffer at all; if he becomes constipated, the iron soon sickens, and the horrible pains begin; if he were to take a smart saline purge once a week, I believe he could go on indefinitely. The saline gives the quickest relief, because it produces such a vast exosmosis of water from the intestinal wall at all points, as to dissolve the mucus which binds the sand, and then washes it out. In extreme constipation, it dissolves fæcal lumps in the same way, except when the masses are enormous. It is thus the best purgative where there is a stricture in the bowels, with dilatation above, as it melts the fæces into a fluid, when they can run through the narrow part.

It is also well known to be the only safe purgative if any inflammatory lesion exist, enteritis or peritonitis. Mr. Lawson Tait takes advantage of this property of salines in his modern treatment of peritonitis ensuing on abdominal section. The principle here seems to be that of giving true and perfect physiological rest by dissolving and washing out all irritants.

Another great advantage the salines have, is that they cause no pain, no griping. A teaspoon of Epsom salts every two or three hours will put an end to many a case of fæcal obstruction in old people, and that without pain, where croton-oil, and drachm-doses of jalap, have only given rise to unendurable pain and collapse.

I daresay copious enemata would succeed even in a shorter time than the saline takes to act (about two hours); but as the latter acts so well, I have not tried the former.

I cannot, of course, say that large doses of iron will affect everyone in the way I have described, but, in the nature of things, I believe it to be highly probable. I think this obstruction of iron worth calling attention to, as many medical men are as fond of giving large doses of iron as I am. There is excellent reason for the practice too. Laache, in "The Relation of recent Researches on Blood-corpuscles to Anæmia and Leukæmia" shows that in anæmia it may be both corpuscles and hæmoglobulin in proportionate quantity which are deficient, or, as in true chlorosis, while the red cells are diminished, the hæmoglobin is reduced out of all proportion to the loss of red cells. In fact, in the latter condition, what red cells remain are individually "chlorotic," are not red, or, at least, not red enough. Again, after bleeding, the red cells increase much more rapidly than the hæmoglobin, until assuming it to be evenly distributed among the corpuscles, it has sunk to 70 per cent. of the healthy standard. Now, in such cases, the value of large doses of iron is seen. According to Laache, small doses of iron chiefly stimulate the numerical increase of red cells; large doses restore both the number of cells and the amount of hæmoglobin in each. This explains the difference which most men have noticed in practice between the large and the small dose.—*British Medical Journal, Sept.* 18, 1886, *p.* 545.

DISEASES OF THE URINARY ORGANS.

43.—ON THE TREATMENT OF SCARLATINAL NEPHRITIS.

By I. E. Atkinson, M.D., Prof. of Therapeutics Maryland University.

[The author opens his paper with the important observation that scarlet fever derives most of its dangers from disorders that complicate or succeed it; of these the most important are derangements of the kidney. Much diversity of opinion apparently exists amongst observers, as to the frequency of serious renal lesion in cases of scarlet fever. Renal catarrh, however, is much more frequently an accompaniment of scarlatina than is generally supposed. The larger portion of the paper is occupied by a lucid and careful description of the alterations found in the kidney, the changes in the urine, and the general symptomatology of scarlatinal nephritis; the whole concluding with the following remarks upon the treatment of the condition.]

Though nephritis may arise both in mild and in severe cases of scarlatina, in cases where exposure is known to have occurred, and in those who have been jealously protected from injurious influences, there can be no doubt that sudden changes of temperature, strong draughts, dampness, &c., are powerful predisposing causes of kidney disease after scarlatina. Mahomed declared that a slight chill during convalescence is sufficient to cause transitory albuminuria. The patient should, therefore, be carefully protected. During the height of the disease the daily bath or tepid sponging should be continued, a procedure through which renal complications are frequently avoided. Even the mildest case should be kept in bed for at least a week after the cessation of fever; nor should he be permitted to leave his room before the expiration of the third week. Out-of-door exercise should not be resumed in disregard of states of season, of barometric and of thermometric variations.

Dietary management will go far toward preventing renal complications. The observance of a rigid milk diet in all cases of scarlatina is regarded by Jaccoud as absolutely preventive of nephritis in scarlet fever. Though this may not be a justifiable opinion, it is certain that in this disease there is no better diet than one of milk. Should nephritis arise, it is the more important that the milk diet should be continued. From two to three or four pints may be given in small quantities at brief intervals during the twenty-four hours, the largest amount mentioned being sufficient for an adult without other food. If there are reasons why milk cannot be given, light broths and soups are more suitable than beef tea, and may be administered with wholesome farinaceous food. Buttermilk may at times be preferred, and bonny-clabber and slip or junket (milk sweetened and flavored and coagulated with liquid rennet), are often relished and are excellent articles of food.

Proper regard having been paid to the patient's hygienic surroundings and nutrition, a brisk hydragogue cathartic should be administered, if, as is usual, there is a tendency toward constipation. For this purpose nothing is better than the compound jalap powder. For a child, from five to twenty grains of this should be ordered every second night or every night, as required, the object being to secure several watery actions of the bowels every twenty-four hours. The proper dose for an adult is one drachm. The more drastic purgatives will rarely be required except in uræmic intoxication and in extreme dropsy, when podophyllin, croton oil, elaterin, &c., may occasionally be employed with benefit. When dropsy is but slightly pronounced, purgation may not be required.

The proper action of the bowels being provided for, the establishment of diaphoresis and healthy skin action will demand attention. Frequently during the day the body may be wrapped in flannels, wet or dry, as hot as can be borne, or the pack may be applied. When available, the steam bath or hot-air bath is to be strongly recommended. Excellent results may also be secured from the hot plunge-bath. Pilz has especially lauded this treatment. It should be used after the method of Liebermeister, by gradually increasing the temperature of the bath from 36° C. to 40° C. (96°—104° F.), in a half-hour. Under its use the dropsy rapidly disappears. Diseases of the heart or lungs, while not positively contraindicating this plan of treatment, necessitate great caution in its application. Every precaution against sudden chilling of the surface must be observed.

The kidneys demand the greatest consideration. The imminence of danger is usually proportionate to the impairment of their function. In giving remedies directly to modify the action of the kidneys, none calculated to increase their hyperæmia should be employed. On this account, the stimulating diuretics should be avoided. Exception can hardly be made in favor of juniper, which enjoys, with some writers, considerable reputation in scarlatinal nephritis; but digitalis, the pharmacological position of which is not as yet definitely determined, has received very general approval as a most useful diuretic in acute nephritis. The infusion is by all odds the best preparation of digitalis when its diuretic properties are desired, and may be given in doses of from one fluid-drachm to a half fluid-ounce, according to age, three or four times daily. Its effects are, however, hardly as happy as when dropsy is associated with or dependent upon cardiac weakness. Those diuretics that act specifically upon the secreting cells of the urinary tubules, the sedative or refrigerant diuretics, are, as a rule, to be preferred in the treatment of scarlatinal dropsy, and will often effect the most astonishing results. Of these the salts of potash are most efficacious, the citrate, acetate, bitartrate, and bicarbonate. In cases of slight nephritis and anasarca, a lemonade made with bitartrate of potash will be taken with avidity, and will

often almost magically increase the quantity of urine, reduce the dropsy, rapidly diminish the albuminuria, and cause a radical change for the better. This lemonade may be made by adding one drachm of cream of tartar to a pint of boiling water into which a lemon, cut into thin slices, has been dropped. This quantity, properly sweetened, may be drunk during the day by a child five years old. Water may be allowed freely, and any of the mild domestic infusions may be substituted for it, their virtue residing principally in the amount of fluid. Dickinson especially commends the free use of water as unirritating and tending to wash out of the tubules the exudated matters that choke up their lumina.

In more severe cases, where life is threatened through one or another of the various features of uræmia, most energetic treatment will be required. Jaborandi may now prove useful. To a child two years old one-twentieth of a grain of pilocarpin may be given by the mouth every fourth or sixth hour, or the same amount may be injected hypodermatically. Both diuresis and diaphoresis will be promptly increased, and in favourable cases the uræmic symptoms disappear. Uræmic coma and convulsions developing suddenly or only after progressive renal embarrassment, should be treated without reference to the scarlatina and upon general principles. A remedy of most undoubted value, at least for the control of convulsions, is chloral, which, if the patient be unable to swallow, may be injected in full doses under the skin or into the rectum. Under its influence convulsions will often speedily cease.

After the more acute nephritis has subsided and convalescence promises to become established, iron becomes one of our main reliances, both through its hæmatic and diuretic properties. The tincture of the chloride is the most appropriate preparation in some cases, but, in general, the mistura ferri et ammoniæ acetatis of the pharmacopœia will produce the best results. Quinine is also a remedy of great value in the treatment of convalescence from scarlatinal nephritis.

During the height of the inflammation, local treatment is often of great importance. If the fever is intense, the pulse full and strong, and if pain and tenderness in the back are pronounced, the abstraction of blood, by leeches or cups, from the loins, will, beyond doubt, often prove beneficial. Large poultices and sinapisms may also often be applied over the kidneys, and besides assuaging the irritation, tend to promote diaphoresis and diuresis. For obvious reasons turpentine should not be employed as a counter-irritant in these cases. Occasionally ascites may be so excessive that the pressure exerted upon the kidneys interferes with the action of therapeutic agents and impedes the functional activity of these organs. Paracentesis abdominis, by relieving this compression, will often be followed by copious diuresis and the rapid disappearance of general anasarca. Cases of scarlatinal nephritis

will, unfortunately, sometimes pass into chronic Bright's disease, and then will require the usual treatment for this condition.—*International Journal of Medical Science, July*, 1886, *p.* 62.

44.—ON ALBUMINURIA IN DIABETES.

By Robt. Maguire, M.D., Phys. to Out-Patients, St. Mary's Hosp.

Albuminuria is a complication of diabetes which is frequently overlooked, and which may be of grave or of insignificant import, according to the various conditions under which it may arise. It may occur as a chronic or as an acute albuminuria. In the chronic form, the albuminuria is associated with an organic change in the kidneys and urinary tract, or it may be due to derangement of the circulatory apparatus of the kidney.

In *post-mortem* examinations made in long-standing cases of diabetes, it is common to find the kidneys hard and tough; and, when examined microscopically, they show an overgrowth of the interstitial tissue round the vessels and glomeruli and between the tubules. The capsule of the kidney may be slightly adherent; but it is rare to find a condition which could be called granular kidney. Doubtless, this interstitial overgrowth has for its cause the irritation of the kidney by continuous overwork. It is a condition which, as might be expected, is occasionally associated with the presence of albumen in the urine, but in only small amount. Such albuminuria has usually little or no influence upon the course of the diabetes; this goes its way as if no such complication had arisen. It must be remembered that one is now speaking of diabetes complicated by interstitial overgrowth in the kidney, and not of those cases of gouty interstitial nephritis, which may present at times an insignificant glycosuria, in addition to the persistent albuminuria. The albuminuria has in these two conditions an essentially different prognosis. Occasionally, however, as Dr. Pavy has pointed out, albuminuria may, to a certain extent, displace a glycosuria, and become the prominent symptom of the case.

Fatty degeneration of the kidney may, again, occur in diabetes, and give rise to an albuminuria, which exerts little influence on the progress of the case.

There is another organic change which I have sometimes seen in *post-mortem* examinations on diabetics, and which may conceivably give rise to albuminuria, although I offer this as a suggestion, and without proof of any kind. I allude to a thickening of the walls of the bladder, and with this—in all probability, in consequence of this—a dilatation of the ureters and of the pelvis of each kidney; in fact, a mild condition of hydronephrosis. We know from experimental evidence that ligature of the ureters will cause albuminuria, and it is possible that continuous high pressure in the pelvis of the kidney, produced in the way I have mentioned, might determine an albuminuria in diabetes.

Such are the organic kidney-changes under which diabetic albuminuria may occur; and it is somewhat remarkable that these, which under other conditions would be considered grave lesions, are here commonly of so little consequence. This becomes almost a paradox, when we find that one form of functional albuminuria which may occur in diabetes is a very bad omen. In the latter stages of diabetes, as asthenia progresses, the heart begins to fail, and one of the early signs of this is a slight albuminuria, due to the deficient circulation of blood through the kidneys. At the same time, we find, of course, general asthenia, and not unfrequently nervous symptoms, such as great depression of spirits with hysterical phenomena, mental torpor, and drowsiness. This, however, is not true diabetic coma, and must not be confused with it. The albuminuria is in itself of little consequence, but the general condition producing it is very serious. The cardiac asthenia may in some cases be recovered from, under the influence of cardiac tonics, but in the majority of cases it is a near precursor of the final break-up.

I wish to call the special attention of the meeting to an acute form of albuminuria, which occurs in connection with diabetic coma, and which is of very serious prognosis. In pursuance of a complete examination of the urine of a patient suffering from diabetic coma of the dyspnœic type, I found a considerable quantity of albumen, which had certainly not been present before the coma set in. The patient died, and at the *post-mortem* examination there was seen, in well marked form, the "necrosis" of the epithelium lining the convoluted tubes and Henle's loops, described by Ebstein. Another patient, under the care of Dr. Morgan in the Manchester Royal Infirmary, showed albuminuria about twenty-four hours before noticeable signs of diabetic coma appeared. I mentioned this in a note to a review in the Medical Chronicle for December, 1884, and since then I have never failed to find albumen in the urine of those patients suffering from diabetic coma of the true "Kussmaul's" type, with whom I have met. I have not a large number of cases to record, about eight or nine in all, but I find that Stokvis, of Amsterdam, at the Wiesbaden congress of this year, has stated as his experience also that albuminuria is of very frequent occurrence in diabetic coma.

A case which came under my notice recently may be mentioned, in that it not only illustrated this point, but was also of medico-legal importance. A gentleman's coachman, who had previously been in apparently good health, although it was afterwards elicited that he had been losing flesh for about a year, complained one day of a slight pain and uneasiness in the abdomen. For this, a druggist gave him a bottle of medicine, of which he took one dose, and died comatose four hours afterwards. The medical gentleman who was called in invited me to make the *post-mortem* examination. On opening the skull, a strong sweet smell of aceto-acetic acid was

perceived, which became almost overpowering when the thoracic and abdominal cavities were opened. The liver was enlarged and congested, the kidneys large, in colour mottled yellow and red, and on section the cortex was found to be greatly increased in extent. A quantity of urine drawn off from the bladder gave the ferric chloride reaction of aceto-acetic acid, contained a large quantity of sugar, and in addition a considerable amount of albumen. A small amount of albumen is frequently found in urine drawn from the bladder after death, but such could not be the origin of the large amount found in the above case. On miscroscopic examination of the kidneys, I found the glomeruli intact, but the epithelium of the convoluted tubes was greatly swollen, in some parts hyaline, in others appearing as a confused granular mass, which was very difficult to stain, and which showed very few nuclei. In many parts, too, the epithelium was detached from the walls of the tube. This condition of the kidneys was, therefore, the probable cause of the albuminuria. The pathological signs showed that the case was one of diabetic coma, and it was afterwards proved that the medicine the man had taken contained nothing harmful.

Recently, in a case of diabetic coma, I analysed the albumen which was present in the urine, and found that it consisted of $2\frac{1}{2}$ parts of serum-albumen to 1 part of serum-globulin, a proportion which I have observed to be a common one in severe organic lesions of the kidneys.

The relation of this albuminuria, and its accompanying kidney-change, to the diabetic coma, is of great importance, but uncertain. The coma is certainly not uræmic coma, but all the later researches prove that it is due to the circulation of some poisonous matter in the blood, whether this be acetone, aceto-acetic ether, aceto-acetic acid, or oxybutyric acid. Two possibilities seem open: one is that the poisonous matter in the blood irritates the kidneys, and so produces the change in the epithelial cells, which change is quite analogous, as far as the convoluted tubes are concerned, to that produced by a large dose of cantharides. In support of this, it should be noted that, in the experiments in which attempts have been made to produce diabetic coma by injecting into the blood the various substances mentioned above, albumen has occasionally appeared in the urine. The other possibility is that something more than the presence of the poisonous matter in the blood is necessary to produce coma. It may be that this further determining influence is the epithelial change in the kidney, the sign of which is the albuminuria described. It will be remembered in this connection that, in the researches hitherto published, the complete symptomatology of diabetic coma as seen in man has not been produced in animals, by the injection of any poisonous matter into the blood, so long as the kidneys have been intact. —*British Medical Journal, Sept.* 18, 1886, *p.* 543.

45.—ON ALBUMINOMETRY BY ESBACH'S TUBES.

By George Johnson, M.D., Physician to King's College Hospital.

I am indebted to Mr. Blomfield's paper in the Lancet for a knowledge of Dr. Esbach's method of albuminometry (see *Retrospect*, vol. xciii, p. 63). After reading it I lost no time in obtaining one of the graduated tubes from MM. Brewer Frères, of 43, St. André-des-Arts, Paris; and Mr. E. Cetti, of 36, Brooke-street, Holborn, has made for me a number of tubes with exactly the same graduation. Having made numerous observations on urines containing variable proportions of albumen, I find the results so much more certain and satisfactory than those obtained by any other known method of clinical albuminometry, that I venture to recommend the general adoption of Esbach's method as an easy and accurate means of determining the actual amount of albumen in the urine.

Thinking, from my experience of picric acid as an albumen precipitant, that the addition of citric acid would be found unnecessary, I experimented with solutions of variable proportions of picric acid. First, I tried a saturated solution of picric acid (equal to 5·3 grains per ounce), testing the same albuminous urine with this and with Esbach's solution. The result was that in most instances the saturated solution of picric acid caused a firmer, and therefore less bulky, coagulum, so that the amount of albumen, as read off upon the scale, would appear to be slightly less than that shown with Esbach's reagent. I next tried a solution of picric acid in the same proportion as that contained in Esbach's solution—namely, 1 per cent., or 4·375 grains per ounce. This usually gave a less firm and more bulky coagulum than Esbach's reagent, and would therefore indicate an excess of albumen. Lastly, I experimented on numerous specimens with a solution of picric acid in the proportion of five grains to the ounce—intermediate, that is, between a saturated and a 1 per cent. solution; and the result is that this solution gives results practically identical with those obtained by Esbach's solution of picric with citric acid. The latter solution, on account of its excessive acidity, throws down uric acid more frequently and more copiously than the picric acid solution alone. In two specimens of albuminous urine, Esbach's reagent gave so copious a precipitate of uric acid, as, if not allowed for, would have led to an excessive estimate of the amount of albumen. The result, therefore, of numerous careful observations is that Esbach's solution of picric with citric acid and a simple five grains to the ounce solution of picric acid give practically identical and equally accurate results; but as the simple picric acid solution is more easily prepared and cheaper than Esbach's compound solution, it will probably be preferred by most practitioners. It is important to bear in mind that if the urine be neutral or

alkaline it must be acidulated by acetic acid before the analysis is made.

To test the accuracy of Esbach's method, in one specimen the precipitate formed by Esbach's reagent and the five grains to the ounce picric acid solution having each indicated 1·1 gramme of albumen per litre, the two sediments were separately washed, dried, and weighed by my son, G. Stillingfleet Johnson, in the laboratory of King's College, and the calculated result in both sediments was 1·09 gramme per litre, a difference of only 1-100th of a gramme per litre from Esbach's result. It may be interesting to add that the slightly more dense and less bulky precipitate formed in the same specimen by the *saturated* solution of picric acid was found, when washed and dried, to have exactly the same weight as each of the other two sediments; thus showing that, although the bulk of the precipitate was less, the weight of the dried albumen was the same as that of the other two sediments.

The original account of Esbach's method is published in the *Bulletin Général de Thérapeutique Méd. et Chir.*, tome xcviii., p. 497.

Mr. E. Cetti is now prepared to supply the accurately graduated tubes, with brief printed directions for their use, at little more than half the cost of obtaining them from Paris.—*Lancet*, *July* 10, 1886, *p.* 63.

46.—ON A MODIFICATION OF FEHLING'S SOLUTION FOR TESTING FOR AND ESTIMATING SUGAR IN URINE.

By F. Cresswell, L.R.C.P.Lond., M.R.C.S., Late House-Physician, St. Bartholomew's Hospital.

I have always found that the chief inconvenience in using Fehling's solution for estimating sugar, was that it would not keep for above a few weeks at the outside, and in hot weather it frequently became untrustworthy in a much shorter time. This trouble is owing to the readiness with which the sodium and potassium tartrate undergoes decomposition. I have therefore tried to dispense with the use of this salt, and I think have succeeded thoroughly in the following manner. After trying several organic substances which were not prone to decomposition in an alkaline solution, I have found that glycerine answers best. It completely prevents the precipitation of copper sulphate by caustic potash or soda, and the solution will keep for an indefinite time in an open vessel, in fact, until the caustic alkali becomes converted into carbonate, and in a stoppered bottle seems quite permanent.

I find that grape-sugar reduces somewhat less copper from the glycerine solution than from the tartrate solution, and that uric acid will scarcely attack it, whereas it was one of the chief causes of fallacy in Fehling's test.

The best method of preparing the solution is as follows. Take about 35 grammes of copper sulphate, and dissolve it in 200 cubic centimètres of glycerine and 100 cubic centimètres of water; then add 80 grammes of sodium-hydrate dissolved in 400 cubic centimètres of water, and boil the whole for fifteen minutes. This is necessary, as all the specimens of glycerine which I have met with contain a small quantity of some substance capable, at a boiling heat, of reducing an alkaline solution of copper. After boiling, the solution is made up to 1 litre with distilled water, and allowed to stand until it is clear. It must be standardised by a solution of grape-sugar of known strength for accurate determinations, and is sure, if made as above, to require diluting. If it be only required for rough clinical purposes, the above quantities may be diluted to 1250 cubic centimètres; 10 cubic centimètres will then be approximately equal to 5 centigrammes of sugar.

The process is carried on in exactly the same way as the well known method of Fehling; 10 cubic centimètres of the copper solution are mixed with 50 cubic centimètres of water, and boiled in a small flask, and the solution of glucose (which should not contain more than one per cent.) is slowly added from a burette, the contents of the flask being kept steadily boiling until the original blue colour of the solution has entirely disappeared; the quantity of solution used must then have contained 5 centigrammes of sugar. Diabetic urine usually requires diluting to one-fifth or one-tenth, in order to reduce the sugar below one per cent. For example, 10 cubic centimètres of a diabetic urine were diluted to 100 cubic centimètres, and transferred to a burette; 10 cubic centimètres of the copper solution require for complete decolorisation 26 cubic centimètres of this diluted urine; 2·6 cubic centimètres of the original urine, therefore, contain 5 centigrammes of sugar, or 100 cubic centimètres would contain 1·92 grammes, or 1 ounce (437·5 grains) would contain 8·4 grains of sugar. In the quantitative examination of urine for sugar, a few drops of the copper solution are mixed with about 5 cubic centimètres of water and boiled, about ten drops of urine are added, when, if sugar be present, on again boiling for a few seconds, the characteristic brick-red hydrated sub-oxide of copper will fall.

I hope the above will prove especially useful to country practitioners, who seldom require to test for, or estimate sugar, and who, when they do, by using the above solution, will escape the annoyance of finding their testing solution decomposed and useless. I have had some of the above solution in an ill-stoppered bottle for between four and five years, without any signs of decomposition.—*British Medical Journal, March* 27, 1886, *p.* 587.

SURGERY.

AMPUTATIONS, FRACTURES, DISLOCATIONS, AND DISEASES OF THE BONES, JOINTS, ETC.

47.—ON BONE DRAINAGE IN HIP-JOINT DISEASE.

By W. Thornley Stoker, M.D., Professor of Anatomy, R.C.S.I., Surgeon to the Richmond Hospital, Dublin.

[After some remarks pointing out the uselessness for practical purposes of the classification of cases of hip-disease now in vogue, Mr. Stoker says:]

Putting aside, as a matter for separate consideration, the important question as to whether particular cases are simple, strumous, or tubercular in their kind, the classification of most help to the practical surgeon is that which, based on the situation in which the disease has originated, divides it into *Femoral*, *Acetabular*, and *Arthritic*.

With regard to the arthritic form, recent pathological investigation seems to prove that joint diseases never occur primarily in cartilage or ligaments, that the engagements of these tissues is secondary to that of the bone or synovial membrane, that even the ligamentum teres—which from the vascular supply it carries has been so often stated to be the starting-point of hip disease—is never primarily engaged, and that the frequency with which it is found disorganised is due to osteitis of the epiphysis, with which it has so vascular a connection. My own observation of hip disease—which has been sufficiently extensive in a city where it is extremely common—jumps entirely with that of Mr. Barwell, who expresses himself that "there is no doubt whatever that nearly all cases of chronic infantile hip-joint disease originate in the bone, and more especially about the pelvic or epiphysal junctions."

I have said so much of the pathology of morbus coxæ, in order to lead to the conclusion I hold in common with the authors I have named, and many others, that this complaint is usually osteal in its origin, and seated at first in the femur—as upon that postulate is founded the treatment proposed by Dr. Frederick Kirkpatrick, which is essentially the same as that which I advocate. I deal with only one point of treatment, and applied to only one class of cases. The mode of treatment is that by boring into the neck of the femur through the great trochanter, so as to obtain bone-drainage, and the case to which it is applicable, that of osteitis, or medullo-arthritis—as you please to regard it—of the femur, in the vicinity of the hip-joint.

If it be conceded that in certain given cases hip disease has its starting point in the femoral portion of the joint, and that an inflammatory condition constitutes this commencement, it can hardly be denied that an opening made into the diseased structures without involving the cavity of the joint is a rational and logical treatment. It only requires that it shall be possible to recognise commencing femoral coxalgia, and that the surgeon shall find it possible to select cases where the disease is mainly confined to the femur, and is in such a modified condition as to afford hope of a good result from the treatment. The cases, of course, affording the best chances of good result are those which are neither strumous nor tubercular; but all we have learned in late years of these cachectic states points to the propriety of removal of the diseased tissue and free drainage in them, no less than in the simple condition. That osteal cases can be distinguished from arthritic, and femoral from acetabular, is sufficiently evidenced by the examination of any good text-book, and, as for the condition of disease in the particular part, the selection of cases fit for operation is a matter of clinical experience more than of written rule. I am strongly of opinion that even where the disease has engaged the soft structures to a limited extent, the operation of tunnelling the bone may effect a cure, as the relief of the bone itself by the exit given to inflammatory matters removes a cause of irritation from the synovial membrane, and must have a beneficial effect. I think, therefore, that while the typical cases for this treatment are those in which the disease has only shown itself in the femur, it is also applicable to instances in which synovitis exists. Further, the plan of tunnelling may be used in the late stage of the disease, as advised by Mr. Greig Smith, as a means of draining the joint of pus or particles of necrosed bone.

To Dr. Kirkpatrick belongs the merit of having, at the meeting of the British Medical Association in 1867, directed attention to this plan of treatment in diseases of joints—the hip among others. He described the mode of cutting down on the trochanter major, and tunnelling into it with a trephine or drill.

I have applied the treatment of bone-drainage by tunnelling the trochanter and neck to two cases of hip-joint disease. One of them, in a child aged five, had commenced as femoral disease, and was operated on when the soft tissues of the joint had become considerably engaged, but before any pus had formed. It has improved to a marked degree, in no point more evidently than in the relief from pain which the child has experienced. I do not make more detailed mention of the case as it is still under treatment.

The second case is that of a girl aged eleven years, suffering from disease of the right hip-joint of four months' standing. She was in the late part of the first of those two stages into which,

as I have said, the best clinical experience divides the complaint. I trephined the trochanter on July 8, 1885. She was kept in bed until July 23, when her pain had so far abated that she could walk without inconvenience, and left hospital to return to her country home. I saw her on December 7th in a perfectly sound condition, able to run and jump with any girl of her age.

The method of operation I follow is to make a vertical incision down to the trochanter, with its centre over the point at which the bone is to be penetrated; to remove the bone to the full depth of a trephine of half-inch diameter, and if additional tunnelling towards the head be deemed necessary, to perform it with a drill or strong director. I then fill the wound with strips of gauze to check the immediate bleeding. The gauze is removed next day, and the wound henceforward kept covered with a moist carbolic dressing. As soon as it has effected its purpose of drainage, the sinus closes without further treatment.

Mr. Greig Smith has laid down a very good rule as to the point at which to enter the trochanter, so as to get safely into the neck. Three prominent points can be felt around the great trochanter. These are the anterior superior, anterior inferior, and posterior inferior angles, and they nearly form the angles of an equilateral triangle. The junction of the anterior and middle thirds of the base line is the proper place to perforate the bone. Comparison of the femur at different ages will show that in entering the bone from this point it is necessary, in order to preserve the integrity of the compact tissue covering the neck, to give the tunnel a more oblique direction upwards in young objects, and approaching the horizontal line in older ones, because of the different angle assumed by the neck as age advances.

Inspection from above shows that any penetration at a point *posterior* to that laid down would involve a risk of opening through the back of the neck of the bone.—*Dublin Journal of Med. Science, May*, 1886, *p.* 386.

48.—ON RESECTION OF THE TARSUS AS A SUBSTITUTE FOR AMPUTATION IN CERTAIN CASES.

By G. A. Wright, F.R.C.S., Assistant Surgeon Royal Infirmary; Surgeon to the Children's Hospital, Manchester.

[An interesting series of nine woodcuts illustrating successful cases of excision of the ankle joint (1 case), excision of the os calcis (3 cases), excision of the os calcis and astragalus (1 case), Pirogoff's amputation (1 case), and excision of the whole tarsus (2 cases), appears in Mr. Wright's paper. The two cases of excision of the whole tarsus, a method of treatment of extensive disease of the bones of the foot, to which the author wishes specially to direct attention as a substitute for the more serious mutilation of amputa-

tion, are given in detail. The main points of the cases are: *Case* 1.—A girl, aged 17 years, had suffered from disease of the anterior calcaneo-astragaloid articulation, the result of a sprain, for twelve months (November, 1884). In Jan., 1885, the foot was explored, and parts of the astragalus and scaphoid removed. On May 8, 1885, a sinus still remaining, the old wound was reopened and another incision carried along the inner border of the foot. The whole of the remainder of the tarsus, except the posterior part of the os calcis, was removed, together with the bases of the metatarsal bones and the malleoli; the tibial cartilage was left. No attempt was made to approximate the bony surfaces, but some tendons were united by catgut and the soft parts brought together. In 1886, she was doing ordinary household work, she walked upon the sole as on the natural foot, and there was fair mobility and power. *Case* 2.—A child, aged 23 months, had suffered for nearly a year, from widespreading disease of the tarsal bones. On Dec. 31st, 1885, the disease was exposed by dorsal transverse incision, and the anterior surfaces of the astragalus and os calcis, with the whole of the cuboid, scaphoid, cuneiform, and bases of the metatarsal bones were removed. The after-treatment was much as in the first case. The child died in March, 1886, from scarlet fever. At the time of death the foot was healed and in good condition.]

Of tubercular joint lesions, disease of the ankle and tarsus comes about fourth in order of frequency; the hip, spine, and knee taking precedence of the foot. In a fair proportion of cases of early disease, systematic treatment in the shape of fixation, rest, and general hygienic measures suffices, but a considerable number of patients suffer amputation of the foot or leg for this disease. In the majority of cases Syme's operation, or else amputation through some part of the leg, is resorted to. In rare cases Chopart's or Pirogoff's operations are performed, but the general opinion of surgeons is against these, and recently even Pirogoff himself declared in favour of Syme's plan as contrasted with his own, while probably Chopart's operation is not performed half a dozen times in a year for tuberculous disease of the tarsus.

There is no doubt that chronic tuberculosis of the intricate and closely adjoining tarsal joints is an intractable and very unsatisfactory disease, and, except in a minority of instances, appears little adapted for conservative methods of operation. Given, however, a foot in which all non-operative treatment has been exhausted, sinuses exist, swelling continues, and more or less pain with entire disability persists, What is to be done? Such cases must first be divided into two classes—those in which tuberculosis exists elsewhere in the form of phthisis or other visceral lesion, and those in which the disease is localised, as far as is known, in the foot. With the subjects of visceral tubercle I have, in the present paper,

nothing to do. Partial operations are out of place, and if anything is to be done, the method which entails least demand upon their powers of repair, usually amputation well above the disease, is the wisest course. In a patient, however, who is fairly healthy, except for the local disease, such radical treatment is only exceptionally called for, and here again the exact locality of the disease divides these cases into three classes: (1) Those in which but one bone is involved—nearly always the os calcis; (2) those in which the ankle joint proper is the seat of disease; (3) those in which the mischief is more widely spread, attacking the transverse tarsal joints, the common tarsal sac, &c. Most frequently disease of the tarsus, unless it originates in the os calcis or posterior calcaneo astragaloid joint, sooner or later becomes generalised, and spreads from synovial membrane to capsule, capsule to periosteum, periosteum to bone and ligament again, and so to another synovial sac, until the whole, or at least the greater part, of the foot is involved. What is then to be done? In Group 2, disease of the ankle joint proper, I would say, failing rest, &c., amputation is the rule, and in most cases amputation through the leg. Syme's operation, or Pirogoff's, is too often a failure from extension of tuberculous mischief along the sheaths of the tendons, or in the tibial cancellous tissue. Excision of the ankle joint for tuberculosis, though occasionally successful, as in the case shown in Fig. 1, is not to be relied upon.

In Group 1, diseases limited to a single bone, much more often the os calcis, necrosis is common, and therefore the disease is usually well defined, there is a line of demarcation. In such cases removal of the sequestrum, or more often excision of the entire bone, gives excellent results. Rarely two bones are necrosed without wide-spreading disease, as in a case where the os calcis and astragalus were removed with good success.

In such circumstances the proper line of treatment is fairly well recognised, and unnecessary sacrifice of parts is comparatively seldom made. It is in Group 3—that of wide-spread tarsal disease—that I would ask for a reconsideration of the usual amputation plan. The severity of the mutilation caused by amputation through the leg needs no comment. As to Syme's operation, it is an excellent one, but it not very rarely fails, and leaves a limb from one and a half to three inches shorter than the other, according to the age at which it is performed. Pirogoff's operation leaves a much better and longer stump, where it succeeds, but is not in general favour, since unless the os calcis is sound, disease of course extends in it. This is, however, an argument against the selection of the case, not against the operation, which I have found give most satisfactory stumps in several instances.

The minor modifications of these operations, and Chopart's plan, with its tributaries, need not be at present discussed. Is there,

then, nothing short of at least a Pirogoff, that gives a good prospect of success in advancing and wide-spread tarsal disease? In a careful paper in the *American Journal of Medical Science, Oct.* 1883, Conner gives statistics of 108 cases of resection of the tarsus in which two or more of the tarsal bones were removed. The most important of these are two cases of his own and one of Jones's from the Lancet, 1881, in which the entire tarsus was taken away through an incision along the outer side of the foot. In Conner's cases the patients were of the ages of 39 and 20 respectively. The operation was done for disease which in one case followed a slight injury. Both patients recovered, with excellent feet, comparatively little deformed, with less than one inch shortening of the limb, and from two and a half to three inches shortening of the foot.

More recently a Russian surgeon has described a plan in which, after resection of the tarsus with the bases of the metatarsal bones and the lower ends of the tibia and fibula, the cut ends of the metatarsus have been fitted to the tibia, so that the patient walked in a permanent equinus position. [This is Wladimiroff's operation referred to in *Retrospect*, vol. xci, p. 54.—Ed.]

In two cases recently under my care for chronic inveterate tarsal disease, I have removed nearly the whole tarsus with good results, though in one of them the patient died of scarlet fever just as the foot got well. [See above.]—*Medical Chronicle, Sept.* 1886, *p.* 460.

49.—ON THE MECHANISM OF FLAT-FOOT.

By Professor Humphry, F.R.S., Cambridge University.

[Professor Humphry, having had the opportunity of dissecting the part, publishes an interesting clinical lecture upon the construction of the plantar arch, and the mechanism of acquired "*Talipes valgus.*" The lecturer's remarks upon the construction of the plantar arch are peculiarly clear, and contrast strangely with the obscure and involved statements usually made upon this subject. Proceeding to demonstrate the dissected part, Professor Humphry says:]

If now we examine the specimen before us, we see that the middle part of the arch is lowered and bowed inwards. The whole of the key-bone, or astragalus, and the adjacent parts of the pillars—viz., the fore part of the os calcis and the scaphoid with the cuneiform bones—are below their proper level, and form a marked convexity on the inner side of the foot. The heel-bone slants from behind, not, as in the normal condition, obliquely upwards and a little *out*wards, but *in*wards and only slightly upwards. Hence the sustentaculum tali, the head of the astragalus, and the scaphoid tubercle, which should be scarcely seen from behind, form marked prominences on the inner side. The os calcis is,

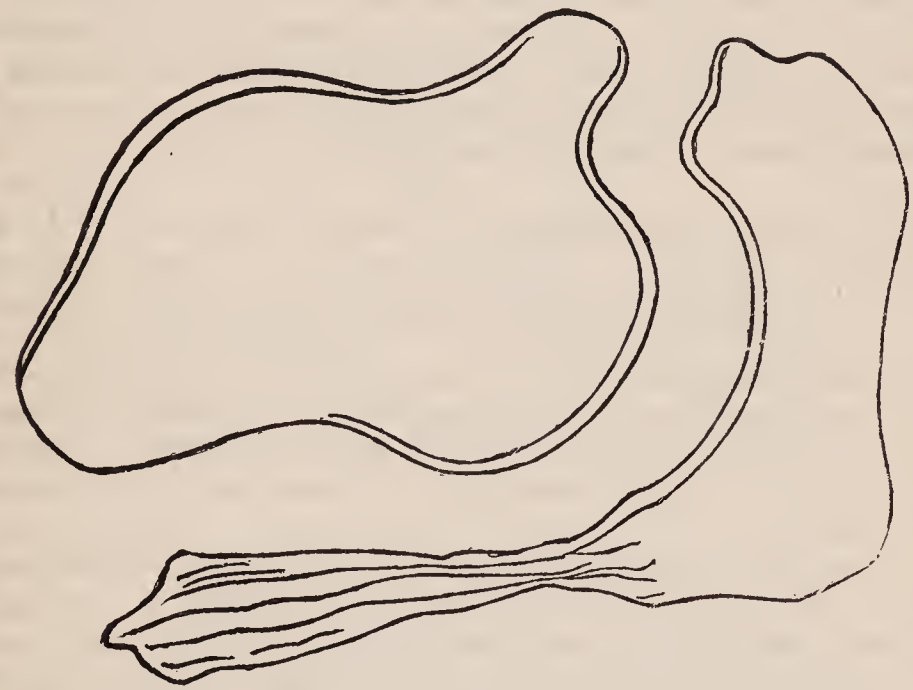
moreover, inclined over to the inner side—that is to say, has undergone a certain amount of super-pronation—so that the outer tubercle at the heel is at some distance from the ground. The extremity of the fibula is nearly in contact with the upper surface of the os calcis, but does not actually touch it; and the calcaneo-cuboid joint is in a state of forced extension. With regard to ligaments, the fibres that have undergone most change are those that form the inner part of the calcaneo-scaphoid with the adjacent or continuous portion of the deltoid. These are much stretched over the bulging head of the astragalus in the enlarged space between the inner malleolus and the sustentaculum tali behind and the scaphoid tubercle in front. The under and outer part of the calcaneo-scaphoid ligament is somewhat stretched and thinned, but otherwise little altered. The remainder of the deltoid ligament, the three parts of the external lateral ligament, the interosseous ligament between the os calcis and the astragalus, and the calcaneo-cuboid ligaments are all rather thin, but not much altered.

Removing the tibia and fibula, we notice that the trochlear surface of the astragalus, the facet for the internal malleolus, and that for the external malleolus, are all somewhat restricted from before backwards, indicating that the movements of the ankle-joint, which consist only of flexion and extension, were rather limited. This is particularly marked in the case of the facet for the fibula, which is devoid of cartilage in its anterior third. It is also observable that the outer margin of the trochlea does not rise so high as usual, which explains the circumstance, before difficult to understand, that the vertical line of the leg-bones upon the astragalus and the foot was maintained, although the heel-bone was, as just stated, rolled over to the inner side, or super-pronated. This subsidence of the outer edge of the trochlea appears to be due to a hyper-rotation of the astragalus upon the os calcis, an excess of that movement upon a vertical axis, or rather upon a slightly oblique backward and downward axis, whereby, as I have mentioned, the astragalus and the os calcis are accommodated to one another during the variations of the plantar arches. The effect of this hyper-rotation has been to turn the hinder margin of the astragalus slightly outwards, the anterior part or ball a little inwards, and the outer process—"processus fibularis," as it has been called—somewhat downwards and forwards upon the upper surface of the os calcis, or rather upon the outer part of the interosseous ligament, which normally intervenes between the os calcis and this process. In other words, there is a persistent condition, in an excessive degree, of the position which the astragalus assumes towards the os calcis when the foot is placed upon the ground, and the plantar arches yield under the superincumbent weight. I say *persistent* condition, because the rotation in the

opposite direction (that which in the normal state occurs when the foot is taken off the ground, or is relieved of weight) was in this case abnormally restricted, the proper form of the part not having been resumable for a long time, probably for years. There is a well-marked articular facet upon the fore part of the processus fibularis, where it came into contact with the os calcis and the interosseous ligament. A facet in this situation is, however, not uncommonly present in the natural state of the parts. The articular surfaces between the astragalus and the os calcis presented nothing obviously abnormal. The greatest changes, however, are in the articular surfaces of the astragalo-scaphoid joint, in the ball or convex fore part and neck of the astragalus, and in the socket or concave part of the scaphoid bone. This joint had long been maintained in an over-extended position, and very little movement could be effected in it. The uppermost part of the convex surface of the astragalus, which is usually very pronounced, has been thrown back—pressed back—towards the trochlea, and raised into an eminence by some heaping up of bone on the adjacent portion of the neck; and it presents in front a small flat, or slightly concave, articular surface, upon which a corresponding facet on the upper part of the scaphoid impinged. The convex anterior part of the astragalus below this rested in a preternaturally deep concavity of the scaphoid; and the inferior and inner part, thinly and unevenly covered with cartilage, was in contact with the expanded calcaneo-scaphoid and deltoid ligaments. By these changes in the form of the articular surfaces, the ball-and-socket between the astragalus and scaphoid is deepened and lessened in area, and is surmounted by and continued into a flat or arthrodial portion, which restricts, and indeed almost prevents, movement between the two bones. This is the only deviation from the natural conformation in the bones of the foot which is worthy of notice; and I think there can be little doubt that it is a consequence, and not a cause, of the deformity, being due to an alteration in the direction of pressure induced by the lowering of the plantar arch which resulted from a yielding of the ligaments. It may be observed, indeed, that the alteration in the bones is of such a kind as to prevent rather than favour a further increase of the deformity. At the same time, it would have been an obstacle to the return to the natural position, which in so advanced and long-standing a case, and with such alteration in the articular surfaces, could not have been effected without osteotomy, if at all.

Flat-foot is sometimes spoken of as a condition of *hyper-pronation*, but not quite correctly, for it is not that necessarily, or indeed essentially; at least, that is not the main feature of the deformity, the inner edge of the foot and the great toe not being usually turned down as they would be in hyper-pronation. It really

consists, as I have shown you, and as you may judge for yourselves in almost any case, in a persistent, over-extended, and incurved condition of the middle and chief joint of the tarsus; and it is due to a wearying of the muscles, more particularly the tibialis posticus, and a stretching of the ligaments, more particularly of the inner part of the calcaneo-scaphoid, with the confluent fore part of the deltoid and the calcaneo-cuboid. The altered direction of the pillars of the tarsus and the pronation of the heel-bone are, as we have seen, necessary sequences, or rather accompaniments: and the lowering and incurvation of the arch, together with the passage of the astragalus internal to the plane of action of the calf-muscle, seriously weaken the foot, and lessen the ability to complete that important stage of the step which consists in using the ball of the great toe as a fulcrum for the action of muscles whose function it is to raise the heel and the ankle. Alteration in the form of the bones may follow from continued undue pressure upon certain parts, as in the upper part of the ball of the astragalus in the specimen before us. (See engraving.) But this cannot



Vertical section of the astragalus and scaphoid bone, with part of the calcaneo-scaphoid and deltoid ligaments, in a case of flat-foot.

usually at least, be an early feature; for in incipient stages of the condition, the parts readily assume their natural relations when the weight is removed, which could not be the case if the bones had undergone a change of form. In the early stages, relief from weight and muscular exercise of the foot will effect a cure. In the later stages, especially if such bone-deformity as we have witnessed have taken place, nothing short of an osteotomy will do good.

There is another point in the pathology of flat-foot I would

mention. It has relation to the muscles which fall into opposite conditions on the two aspects of the foot, both of which conditions add to the difficulty of relieving the deformity; and the one is apparently, to a considerable extent if not entirely, induced by the other. The muscles on the tibial and flexor aspect of the foot become relaxed and enfeebled, so that they fail to exert their proper contractile power and cease to afford their proper support and to effect the normal movements of flexion and incurvation. Hence, the antagonistic muscles—the extensors and the peronei,—not being duly stretched or extended, fall into a contracted and irritable condition, which in no small degree aggravates the deformity and the discomfort arising from it; and the condition is further increased, or it may in some cases be excited, by the demand made on them to steady and brace the tarsus when the foot is placed on the ground and the weight of the body is thrown over it. Their state is similar to that of the muscles on the outer side of the knee in cases of knock-knee, and of those occupying the concavities of the spine in cases of lateral curvature; and it is analagous to that of the flexor muscles in cases of disease of the knee and other joints. This state is relieved by rest, especially if the rest is combined with extension by means of a well-applied splint; but it soon returns unless the treatment is continued for a sufficient period.—*Lancet, March* 20, 1886, *p.* 531.

50.—ON THE CAUSES AND PREVENTION OF FLAT-FOOT.

By M. P. Mayo Collier, M.S., F.R.C.S., Senior Assistant-Surgeon to the North-West London Hospital.

Some novel departures in the treatment of flat-foot have been lately brought before the profession. The fascination of novelty, and not necessity, is the mother of these inventions. The present treatment of flat-foot is founded on erroneous notions of its anatomy and causes.

It is incorrect to describe the antero-posterior arrangement of the bones of the foot as a bridge, and the astragalus as the keystone. A bridge usually has two extremities, fixed immovably, so resisting the tendency of forces from above to flatten the arch, the keystone being the highest point and centre of the convexity. Now, the arch of the foot has only one fixed point—the inner tuberosity of the os calcis; the other extremity of the arch is constantly changing its position, and moves considerably forwards when supporting the weight of the body. The astragalus cannot be likened to the keystone of a bridge, as it does not transmit equally to both extremities of the arch the weight of the body. The greater part of the weight of the body is transmitted directly through the os calcis to its inner tuberosity; only a small part, comparatively, is transmitted through the head of the astragalus and scaphoid to the

anterior extremity of the arch. A glance at a vertical section of a normal foot will immediately convince one that such must be the case. The concavity on the under surface of the astragalus fits the saddle-shaped articular surface on the upper aspect of the os calcis accurately, permitting no gliding movement forwards, but only a rotation of the astragalus inwards on the sustentaculum tali as an axis. A movement forwards of the astragalus on the os calcis in the normal position of the foot is impossible, as the sustentaculum tali fits into the concavity between the two articular facets on the under aspect of the astragalus. A movement forwards is impossible when the sole of the foot is resting on a horizontal surface. As proof (if need be) of this assertion, in the normal position of the os calcis the astragalus, being unconnected by ligaments or other structures, will support any appropriately arranged weight, without slipping forwards or becoming displaced.

In the light of these facts, it is perfectly evident that the chief cause of "flat-foot" cannot be due, as stated by most authors, to "a general want of tone in the fibrous structures of the body." The plantar fascia and ligaments maintain the normal position of the os calcis, and these in their efforts are assisted by the tendons passing under the lesser process of the os calcis. Ligaments are only capable of bearing a certain strain, and when continually stretched will atrophy and yield. They yield because they are over-strained first; they perform their function satisfactorily as long as they have their normal duty to perform. They do not grow weak or atonic first, and then stretch, but after being unduly strained they then grow weak and stretch. I wish to point out and maintain that the flattening of the foot is not due primarily to weakness and laxity of the ligaments, but to an antecedent alteration in the position of the os calcis. I have stated that the os calcis is capable, in its normal position, of supporting the astragalus and any reasonable superimposed weight, without the intervention or necessity of ligaments or other bonds of union. This statement holds good as long as the foot rests on a horizontal surface. If the foot rests on a surface, so that the heel is raised above the level of the toes, the weight of the body is not transmitted so directly to the posterior half of the os calcis. The saddle-shaped surface on the upper aspect of the os calcis becomes an inclined plane, sloping downwards and forwards, and, consequently, favours a sliding movement forwards of the astragalus, thus throwing the weight of the body on the calcaneo-scaphoid, interosseous, and plantar ligaments. An intermittent and occasional strain these ligaments can well stand, but a constant and continuous strain ends in atrophy, weakness, and stretching. In pointing out how constantly this cause of flat-foot is at work, we have only to reflect that each and all of us walk and stand under these abnormal conditions; the heel always being raised above the level of the sole of the foot,

and with some misguided individuals to the extent of several inches. In most cases the strain is intermittent, but where constant and continuous, as in omnibus and tram-car conductors, operatives in factories, shop assistants, and others, where constant standing is necessitated, how common is this affection! Dr. Little says, "a slight degree of atonic valgus is common in girls, especially in those of the upper and middle classes; less common in boys." Why not in the less fortunate and often badly nourished females of the lower classes? Because the high heel is less prevalent in the lower than in the upper classes, and less common with men than women. For the prevention of flat-foot I would say, Don't wear a heel: let the sole of your boot be perfectly flat.

One word about treatment. It is a constant practice with surgeons in cases of flat-foot, when not too far gone—when the patient is capable of walking, although with discomfort,—to order a pad of leather or other material to be placed on the inner side of the boot to support the arch. Does this support the arch? And how can it? In flat-foot the arch is destroyed. It may compress the internal plantar nerve between the pad and head of the astragalus, and so become intolerable; but if it does not do so, it is a source of considerable comfort to the patient. Why a pad in the boot on its inner side is a source of comfort to the patient is that it belts up the anterior extremity of the os calcis, and maintains it in its nearly normal position, counteracting the effect to some extent of the displacement, directing the weight of the body to the inner tuberosity of the os calcis, and removing the strain from the plantar structures. The treatment of these cases is simple when not too far advanced; good food, fresh air, and as much rest as possible, with a radical change in the construction of the boot. The toe and heel should change places, or, what amounts to the same thing, a good laced boot should be worn, with the sole quite an inch thick in front, fining off to a line or two at the heel. By these means the normal inclination of the os calcis would be maintained, and the weight of the body properly disposed of.—*Lancet, Sept.* 4, 1886, *p.* 441.

51.—THE IMMEDIATE REDUCTION OF DEFORMITIES.

By Noble Smith, F.R.C.S.E., Surg. All Saints' Children's Hosp.

In the British Medical Journal of April 10th, reference is made to experiments lately performed, as proving that "the rapid method of treatment of orthopædic deformities" will be followed by good results. I am able to verify the fact, inasmuch as I have adopted this plan of treatment, in operating upon patients for the last five years, and have, upon several occasions, advocated the complete, or nearly complete, restoration of the parts to their normal position, directly after subcutaneous tenotomy.

This plan not only simplifies the after-treatment, to an immense extent, but the results are more satisfactory. For instance, I have not met with a single case of relapse, a result which not unfrequently occurs when the usual plan of allowing the tendon to unite, while the parts remain in the deformed, or nearly deformed, position is followed. The apparatus for after-treatment, in cases thus dealt with, need not be so complicated or expensive as is usually thought requisite, and, in most cases of wryneck, no apparatus whatever, except a stiff collar, is required.

Caution, however, is necessary that actual union is obtained. Care must be taken not to apply too much pressure upon the place of separation, and the tendon must be examined from time to time, and the parts brought nearer together, if the separation seem too wide. This supervision cannot take place when plaster-of-Paris bandage is used, and I have seen disastrous results from thus fixing the foot in the natural position, after tenotomy for talipes equinus. Severe talipes calcaneus resulted from excessive lengthening of the tendo Achillis. There need be no fear of such an unfortunate effect, if movable splints be used, and the progress carefully watched.

This plan of immediate reduction of deformity, after tenotomy, is surely deserving of much greater attention than it has at present received. The results are excellent, and, in cases of club-foot and wryneck, the tediousness of after-treatment is very materially lessened, or entirely removed.—*British Med. Journal, April* 17, *p.* 738.

52.—ON THE TREATMENT OF RICKETS.

By C. G. Wheelhouse, F.R.C.S., Consulting Surgeon to the Leeds General Infirmary.

I do not purpose to enter at any great length into the details of the constitutional treatment by which we endeavour to mitigate the evils of approaching or apprehended rickets. Fortunately, the oncoming of the disease is heralded by unmistakable signals; and, long years ago, Sir William Jenner pointed, with unerring certainty, to the signs of its approach; (1) tenderness of the general frame, which makes the child shrink from playfulness and the romping so generally loved by children; (2) the child's exceeding quietude and "goodness" so long as it is left motionless and undisturbed; (3) its determined efforts to kick away its bedclothes, and to lie naked at night; (4) the profuseness with which, notwithstanding such nakedness, it sweats, especially about the head, whenever it sleeps; (5) the precariousness with which it sleeps, and the uncertainty with which it feeds. Then, next, there come into prominence the disproportion between the cranium and the face, the prominent protuberant forehead, the enlarged and thickened joints, especially the wrists and ankles; and, finally,

the general distortion of the bones; the ill-formed chest, the flattened pelvis, the twisted and bent limbs, the weakened and yielding joints; and so the disease becomes established.

Now, if I have been correct in my estimate of the causes by which this condition has been brought about, the general line of its constitutional treatment must be clear and well defined. A healthy home, sunlight in abundance, fresh air in unlimited supply; warm, porous, and light clothing; carefully chosen and nutritious food; and a tonic anti-syphilitic line of medication, with iodide of potassium as the salt of life; iron, in some form, as the aid of the staff of life; and mild occasional mercurials as the scavengers of the blood and *primæ viæ*, will effect all that the physician can do; but, when the efforts of the physician fail, or have proved futile, the surgeon is still able to bring further help to his assistance.

Until recent years, such deformities were chiefly treated by forcible bending, by steadily maintained counter-pressure, by the persevering use of splints, of bandages, of springs, and such like appliances and mechanical aids. And even yet many such cases are still so treated, and many are so cured. But many which, in former times, could not be so cured, are now also well within the range of surgical treatment.

In those times, the premeditated section of the bone, or of the tendons of the muscles by which they are pulled out of shape, were things unthought and unheard of; and it is only since three great advances in general surgical science became established, that the power which we now possess over them was obtained. The first of these was the discovery of subcutaneous surgery; the second, the discovery of anæsthetics; and third, that of antiseptics; and, since these discoveries have been made, the whole domain of surgery has been extended to an untold area in the treatment and cure of these deformities.

I am not old enough to go back to the earliest days of subcutaneous surgery, but I can remember the time when the orthopædists of the day were hailing with great triumph the possibility of rectifying the deformities of clubbed feet, of twisted and distorted joints, by the subcutaneous section of the tendons of the muscles and fasciæ by which such deformities are often produced; and when the almost painless use of the tenotomy-knife was superseding the horrors of Stromeyer's and Scarpa's shoes, of screw-instruments of various kinds, and of appliances which remind us vividly of the horrors of the inquisition chamber, and when the cure of such deformities was beginning to be looked upon as one of the certain, rather than of the chance, results of surgical interference; and, year after year, I have seen fresh acquisitions made in this department of surgery, until now we fly to the tenotomy-knife as an almost infallible resource. But it is only of very recent years that the possibility of dealing in the same

way with the deformed bones themselves has come into practical use, and that we have learned that they may be as safely divided as the tendons by which they are surrounded.

I wish I could pourtray for you the excitement produced by the first cases in which Mr. William Adams succeeded in subcutaneously dividing the neck of the thigh-bone, ankylosed at a right angle to the pelvis, and in thus straightening a supposed hopeless and incurable deformity.

The territory of the joints, too, has of late years been conquered by the surgeon, and operations are now performed upon them which, in my young days, would have been regarded as reckless and unjustifiable; and now, every week of your lives, you will see both bones divided, and joints disregarded in the operations that are in daily use for the cure of malformations of the bones. But, if it had not been for the two other discoveries I have named, this could not have been accomplished; for, without anæsthetics, the boldest of us, or, as the public would say, the most cruel of us, would have shrunk from undertaking them; parents would never have been found consenting to and courting them; and Nature would have failed to carry our subjects through them. And it is only by the beneficent aid of antiseptics that the comparatively much larger wounds we are compelled to inflict could have been kept harmless and aseptic, and have been reduced to the condition of subcutaneous ones; or could have been made with the certainty that they could heal as readily, as primarily, and with as little danger.

I was the first, in 1878, to perform Professor Ogston's operation, in this Infirmary, for the cure of genu valgum. Of my own inspiration, I am free to confess I should never have dared to venture upon anything, as it seemed to me, so full of surgical risk and danger; but, in social communication with the late Mr. Callender, of St. Bartholomew's Hospital, I heard from him of the wonderful success that, in his hands, had been attained by it, and by his kindness I was permitted to accompany him to St. Bartholomew's, and I was there shown and saw him dress a patient, upon whom he had only recently performed the operation; and I was so carefully instructed by him in the details of its performance, and so confidently assured that the proceeding was a justifiable one, that I promised him I would give it a trial. He himself provided me with the necessary instruments, and you know how unfortunately numerous are the opportunities which, in this large centre of surgical work, are presented for its performance.

My first case, undertaken purely as a surgical duty, and performed under an anxiety which, in my long professional career, has rarely been exceeded, was so perfectly successful, and the benefit which resulted was so marked, that I repeated it again and again, until,

at last, I began to do it almost without any anxiety at all—almost, but never quite. I could not divest my mind of the fear of a suppurating knee-joint, or of a possible subsequent necessity to amputate a limb which, though deformed and crippled, was not an useless one, and which always made me approach the operation with a shrinking dread.

Neither of these evils, however, I am even now thankful to be able to tell you, ever happened to me; and, often as I have performed it within these walls before I resigned my active surgeoncy, I never saw any really serious consequences follow it. Nevertheless, it was a day of rejoicing with me when I was able to supersede it by the more efficacious, and unquestionably less dangerous, method proposed by Dr. Macewen, of simply dividing the shaft of the femur above the joint, and without risk of interfering with it; and I never take up our operation list, and read therein, as I do almost every week, of one or more "Macewen's operations for genu valgum" to be performed, without thinking how happy both surgeon and patient ought to feel that the one operation has superseded the other.

Since the day I performed the first Ogston's operation, no fewer than sixty-nine such operations have been undertaken in this Infirmary; and, though Macewen's operation is the newer proceeding, I learn from the records of the institution that it, too, has been performed two hundred and eleven times; and so successful have both operations been, that, out of all this great number, only two have died—one from pyæmia, due to the operation, and one of scarlet fever, contracted after the operation, and during the process of healing. And of other sections of bones for the cure of deformities I could give you a long list (236, which have been done in the same time). Of the satisfaction they have afforded me, I can give you no comprehensible idea; but I can congratulate you, and I do very heartily, that a means of safely effecting untold good, and of mitigating indescribable misery, has, by the experience of the past few years, been placed at your disposal.—*British Medical Journal, May* 22, 1886, *p.* 962.

53.—ON EXCISION OF THE COCCYX.

By Walter Whitehead, F.R.C.S.E., F.R.S.Ed., Surgeon to the Manchester Royal Infirmary.

[After relating two eminently successful cases of excision of the coccyx, Mr. Whitehead says:]

The treatment of coccygeal pain falls under three heads—viz: 1. By means of rest and anodynes. 2. By complete or partial separation of the bone from its muscular connections. 3. By excision of the bone. As in other cases, our method of treatment

must always be guided by the nature of the case. Thus in those where the pain is due to hysteria or to reflected irritation, owing to uterine or ovarian disease, it would obviously be unsurgical to remove the coccyx. There are, however, a large number of other cases, in which surgical interference will probably be required, and which may be arranged under the following heads: Old fractures and dislocations, in which the bone has become fixed in a faulty position, either that of flexion or of extension; congenital elongation of the coccyx; necrosis, whether traumatic or otherwise; tumours connected with the coccyx; and, finally, a large group of cases of obscure pathology, in some of which there appears to be periostitis of some or all of the segments, in others inflammation of the sacro-coccygeal joint.

In an old fracture or dislocation with displacement, we can hope for no improvement apart from operation, and here also Simpson's operation of separation of the attached muscles cannot be expected to succeed in relieving the patient. Skey attempted to remedy an old dislocation backwards with consequent extreme flexion of the coccyx, by means of traction made by passing a loop of wire over the apex of the bone and connecting this loop with a splint attached to the spine; but the pain produced by this method was so great that it had to be abandoned. It might appear possible in such cases to separate the displaced bone at its abnormal angle, and endeavour thereafter to retain it in position by a plug introduced into the rectum, but the difficulty of preventing a return of the displacement must necessarily be great, if not insuperable. Hence, in such cases I should advise excision of the bone.

Further, if congenital elongation be a cause of pain, removal of the part is clearly indicated. So also in cases of necrosis, as in the first of my patients, we are following the ordinary surgical method in removing the sequestrum. Cases of tumour involving the coccyx must be treated on general surgical principles. But it is in cases where there is no obvious lesion that there is the greatest room for diversity of opinion as to the method of treatment to be adopted. Here we would naturally try, before resorting to operation, the effects of rest and of the various anodynes. But if this treatment should fail, as it had done in my cases before they came under my observation, what is to be done? Hilton recommended separation of the fibres of the sphincter ani from the apex of the bone, and thus undoubtedly made possible more perfect rest. Simpson went further and completely divided the muscular connexions of the coccyx by means of subcutaneous section, and he was thus able to cure a considerable number of cases. But he himself admits that in some instances this operation was insufficient, and he then resorted to the procedure, which had long before been advocated by Nott, of removal of the coccyx. In nearly all cases the latter method seems to have effected a cure, and I should therefore be inclined to

adopt it at once, instead of running the risk of wasting time by the subcutaneous isolation. The operation of excision of the coccyx is sufficiently simple and without danger: it is more easily performed than the subcutaneous division of muscles; its result is apparently universally good, providing that the diagnosis be correct; and the loss of the bone does not seem in any case to have caused inconvenience. On these grounds, therefore, I would advocate excision in all cases of coccygeal pain where non-operative treatment has failed to give relief, unless the pain be due either to some constitutional condition, as hysteria, or to some reflex influence, as in uterine and ovarian disease.—*Lancet, July* 17, 1886, *p.* 112.

54.—ON REPEATED OPERATION FOR CARCINOMA MAMMÆ.

By Edmund Owen, F.R.C.S., Surgeon to St. Mary's Hospital.

It has been remarked by a thoughtful surgeon, that he who values his peace of mind will never operate for cancer of the breast. That same surgeon would, however, be the first to admit that the mental ease of the practitioner is not to count before the physical well-being of the patient. It is afterwards a great comfort to a patient to feel that she has had the privilege of operation, even though there be recurrence of the disease.

As time advances, it will probably be found that operative surgery can be of yet greater service in rendering cancer a strictly local disease. If so, the first advance will likely be made in dealing with the enlarged cervical—supraclavicular—glands, which are infected after invasion of the axillary lymphatics, through the apex of the axilla and beneath the clavicle. Although they can be pulled down by the fingers and forceps in the armpit, especially if, at the same time, pressure be made from above the clavicle, still, the better way will probably be to extract them by a direct incision at the root of the neck, after the clearance of the armpit.

After operation, the patient should present herself for inspection by the surgeon at regular intervals, say of six weeks or two months; so that, in case of recurrence of the disease, no time may be lost in operating again. Then, in case of suspicious fulness about the axilla, or of hardness about the scar, the cicatrix may be widely removed, and the armpit again examined, and, if necessary, cleared out. To have operated once should not suffice; time after time must the attack be renewed, whilst there is prospect of operating through uninfected tissue—of getting beyond the disease.

The value of this treatment is shown in the case of Mrs. M., whom you have just seen. She was sent to me on May 10th, 1876, in order that I might carry out the treatment by injection of acetic acid. The patient was in service as a lady's maid, and declined operation by the knife. She called herself fifty, but she

was really eight years older. For seventeen months a tumour had been growing in the sternal side of the right breast. It was very hard, and the skin was dimpled over, and adherent to it in several places. There were some enlarged axillary glands. For seven weeks the acetic acid treatment was carried out, but without any avail, and operation by the knife was then agreed upon. At the time of its performance, the enlarged glands were removed from the armpit. In the early part of 1877 there was a return in the pectoral region, and a former colleague swept away all the diseased tissue with a knife. In April, 1878, the patient was fairly well, but soon after there was fresh recurrence of the growth. I operated again; and I performed a fourth operation in the beginning of 1879. After this last operation, she secured a pension from the Putney Hospital for Incurables.

As you examined her with me just now, you found the extensive cicatrix perfectly soft and movable, and without tenderness. The armpit, moreover, is perfectly clear of enlarged glands, so far as one can determine by careful examination. It is now more than seven years since the last operation, and the woman seems to be absolutely cured of her disease.—*British Medical Journal, May* 29, 1886, *p.* 1014.

ORGANS OF CIRCULATION.

55.—ON A CASE OF THORACIC ANEURISM TREATED BY A NOVEL METHOD.

By Richard Barwell, F.R.C.S., Senior Surgeon to the Charing Cross Hospital.

[Mr. Barwell's case was that of a man aged 39 years. The symptoms of aneurism had existed for three years. There was a plainly visible tumour measuring four by three and a half inches, at the upper part of the anterior chest wall.]

The diagnosis was an aortic aneurism, large, probably very large, springing from the lower or concave part of the arch, and progressing both forwards and backwards. In such a case any deligation of vessels was evidently out of the question, and I treated him by rest and restricted diet; in consideration that he had had syphilis, also by iodide of potassium for a few weeks, by small doses of aconite, and by the salicylate of atropia. You will remember that under this treatment the man, though his condition varied considerably from time to time, certainly improved up to the beginning of the year 1886; indeed, in the earlier days of January, the pectoral tumour had so far diminished that the chest was almost flat. Then began a period of exacerbation, the cough became worse, and the tumour, both intra and extra-thoracic, increased. I need hardly say that when this aggravation set in my

mind was greatly occupied with considering whether any more directly surgical method might be available; the only ones that appeared to me at all feasible were electrolysis or the introduction of a foreign body—wire, horsehair, catgut, or the like. The result of neither method is encouraging. It is true that of 37 cases of aortic aneurism recorded by Ciniselli he gives 6 cures, but this differs so widely from other statistics that I can hardly accept it. Dr. Vivian Poore gives a much smaller number of cases, with 6 deaths. The latest writer gives of aneurism of the thoracic aorta 114 cases, with 69 benefited, 38 deaths, and 45 failures; but of the 69 benefited, the benefit, whatever it might be (if any), lasted but a few months in 37, not a longer time than might be accounted for by rest, not so long a period as that during which the symptoms of this patient had improved.

Let us turn to the other method. Foreign bodies, such as are named above, have been introduced eight times, and in all without success, save in a case of brachial aneurism too small to furnish any data. And yet both these methods recommend themselves to our reason; they seem as if they ought to succeed. What, then, is the cause of failure in every or very nearly every case? The question is important, because if the correct answer can be found it may help us to eliminate the cause or causes of failure, and lead us to success. Electro-puncture, when so carried out as to avoid irritation on sloughing of the sac—in other words, so as not to be injurious,—fails, I believe, for the following reasons. The cases in which it is used are of necessity large aneurisms, with sacs capable of containing twenty, thirty, or more ounces of blood, and into this large space from one to four needles are inserted. If these be connected with the positive pole, a hard but very small clot will be formed round each needle. It seems to me that the difficulty, the rarity of success, depends on the very slight influence that one, two, or three little nodules of coagulum can have on so large a mass of blood. If, now, we consider the other method, we find in all probability an opposite defect—namely, the wire or other substance occupies a considerable space in the sac; and I think there is little if any doubt that the blood will coagulate round substances thus introduced; but the clot is very soft, of that sort which Broca called passive; it is unstable; and some clinical facts show that such clot may be redissolved, and there is possibly also a danger that some shreds of it may be washed away in the form of embola. This review of the probable cause of failure of both methods led me to consider that if we could increase the area of galvanic action, or increase the hardness and stability of clot formed on foreign substances, we might be led to a successful method. This, it seemed, might be effected by introducing into an aneurismal sac steel wire arranged to lie in wide coils, and then by passing along it a carefully regulated galvanic current.

By this time the patient was in a very critical state: both lungs admitted but very little air, in places none at all; his cough was very painful and constant; the expectoration frankly purulent, the wave of blood in the extra-thoracic part appeared almost subcutaneous. In the mechanical arrangements there was a little difficulty; an ordinary trocar and canula, such as have been hitherto used for passing wire into sacs, was evidently unfitting on account of its conducting power. A tubular needle of vulcanite with a steel tip and several other devices were procured and rejected. At last a tube of ivory sharpened like a hypodermic needle was accepted as the most feasible arrangement. On March 2nd, the skin being rendered insensitive by the injection of cocaine, a fold was pinched up and a little incision made from within outwards over the tumour; the ivory needle was then thrust in without difficulty, and about ten feet of the finest steel wire passed into the sac. The wire, having been first wound on a wooden cylinder half an inch in diameter, and being of the best steel, must, after being paid through the needle, coil itself up again in the sac. Dr. Murray had kindly undertaken the management of the galvanic arrangements, whom I must thank for the great pains he took to carry out the intentions which I had explained, and for writing the following short account:—"The wire was connected with the positive pole of an eight-celled Garnet's battery. The negative was applied to the upper dorsal region a little to the left of the middle line. Between the electrode and the skin was interposed a piece of amadou about a foot square, thoroughly saturated with hot water. A galvanoscope and a voltameter (Gaiffe's) were included in the circuit. The resistance in the voltameter was so great that the strength of the current did not exceed four milliampères. Twenty cells of a Coxeter's 'practitioner's voltaic battery' were therefore added to the Garnet battery, and the current strength was raised to about nine or ten milliampères. At this level it was maintained during the operation. The current was passed for an hour and ten minutes. Some redness of the skin was caused by the negative pole, but no indication of irritation at the place of puncture." For twelve hours signs of consolidation were absent, or nearly so; but at the end of that period the pulsation seemed considerably more distant and the tumour much harder, and this change rapidly increased. The lungs began to unload themselves of their accumulated pus and muco-pus; expectoration, very difficult previously, became easy and somewhat copious, showing decrease of pressure on the bronchi. But on March 5th (fourth day of operation) a new tumour appeared to the right of the sternum and rapidly increased. The man also became weaker. He died on March 9, a week after the attempt, partly from exhaustion, and partly, as it appeared, from rupture of this second sac.

At the *post-mortem* it was found that the interior of the bronch

were of a deep purple colour; in places the mucous membrane was nearly or entirely absent; the substance of both lungs airless and tough, sinking in water, but not from inflammatory consolidation. I have elsewhere remarked on this condition, and will not now detain you with a further description. The very large aneurism occupied the concave aspect and lower part of the front of the first and second part of the aorta; it had eroded a portion of the sternum and the ribs; the anterior portions of the almost solid lungs, more especially of the right lung, seemed to form part of the sac. On opening the aneurism, it was found to consist of two parts: a left portion, much the larger; and a secondary or right portion, which seemed to have recently increased in size, and which, where the lung formed a part of the wall, had burst and given exit to 2lb. 8oz. of blood, which was found in the right pleura. The left portion contained large wide coils of steel wire, each of which was surrounded by a pretty thick coat of firm colourless fibrin, strongly adherent to it at many places—that is to say, wherever the metal was in contact, or within a moderate distance of the wall, the wire was bound to the sac by this fibrin, thus greatly increasing its strength and resisting power.

Now let me especially point out to you that my attempt was evidently too late; the man's lungs were already all but useless. The conformation of the aneurism also was unfortunate, in that it possessed a secondary sac, into which my wire could not pass—not a new one developed after the operation, for the man told me in writing three days before his death that the tumour to the right of the sternum had existed two years previously. The endeavour to save life was by these circumstances frustrated. But consider what the condition of things found in the large sac means. Evidently it means that by passing a galvanic current, not merely along two or three needles, which are afterwards removed, but along some feet of wire which are left *in situ*, we have a device by which a considerable quantity of hard, firm, and persistent clot can be produced in large quantities, even though, as in this case, the aneurism may be close to the heart. I hope I am not too dogmatic in saying that if a galvanic current and coils of wire are to be of service in such cases, they will only be so when used in combination, after the manner thus illustrated.—*Lancet, June* 5, *p.* 1059.

56.—THE TREATMENT OF ANEURISM BY ELECTROLYSIS.

By John Duncan, M.D., LL.D., F.R.C.S.Ed., Surgeon to the Royal Infirmary, Edinburgh.

[In an important series of papers entitled "Observations on the Surgery of the Vascular System," appearing in the Edinburgh Medical Journal, Dr. Duncan, after some remarks on the rationale

of the electrolytic treatment of aneurism, writes as follows upon the *results* of the method.]

It is evident that an aneurism may be cured through electrolysis, if there be complete and immediate occupation of the sac by the solid products, if the fluids are expelled into the general blood stream, and if the aneurismal wall contracts in proportion to the shrinkage of the clot. Or, alternatively, it may be cured because the artificial production of solid material provokes to the subsequent deposition of laminated fibrin. But it is also evident that the blood stream may re-enter the sac by mingling with any fluid still unexpelled, or because the froth contracts more rapidly than the aneurismal wall; or again, that if the blood be of non-coagulating quality, the solid matter introduced may fail to induce further deposition of clot or fibrin.

The results of my operations, now including a considerable number of aneurisms, illustrate and confirm these conclusions from experiment. And, first, electrolysis has not in my hands given rise to any untoward effects, so far as the electrolytic process itself is concerned. The evils that may be apprehended are the carriage into the general circulation of injurious electrolytic products, the production of hemorrhage, and the excitement of inflammation. So far as I can learn, the first of these possibilities has not happened in the hands of any surgeon. I suppose that the gases and liquids produced are not injurious, and that the solids are of such a character, and so adhere to the needles, and afterwards to the walls, that they are not easily carried away. It is indeed a comparatively rare event that portions of the normal clot become displaced, and perhaps the artificial products may be regarded as having similar probabilities. The chance is not to be left out of account, but is very unlikely to happen.

But hemorrhage and inflammation have occurred, and have even produced fatal results in the operations of other surgeons. I attribute the complete immunity of my own cases to care in avoiding the electrolysis of solid textures, and in passing the needles through a part where the wall of the aneurism is of considerable thickness.

Three cases I have had in which there was a suggestion of these accidents, but without serious consequences, and from entirely preventable causes. In one of my early cases guttapercha was used as the insulating medium, and a portion was stripped off in withdrawing the needle. I afterwards picked it out of the subcutaneous texture without evil result. In yet another early case a small subcutaneous abscess formed. We were not then imbued with antiseptic principles, and I attribute it to the fact that our needles and fingers were not rendered aseptic. In a third case, although there was no external hemorrhage, considerable subcutaneous ecchymosis occurred. The pressure of the finger tips on the little punctures had not been sufficiently firm and prolonged to prevent

the blood flowing from the orifices in the sac, or rather probably the pressure had been badly directed, because I endeavour to make the needle tracks somewhat valvular, and it is necessary to cover with the finger not only the external orifice but also the estimated situation of the internal.

But I have had neither external hemorrhage nor inflammation of the sac, because I insulate with vulcanite the needles where they lie in the textures, and avoid touching anything but blood with the exposed points. Only one risk, in short, ought to attend these operations. In two of my cases of aortic aneurism death by internal hemorrhage occurred within a week after the operation. In one the opening took place into the pleura, in the other into the trachea. I do not know that the treatment and death are to be regarded as cause and effect, but it seems not improbable that the strengthening of the wall in one direction may have thrown greater pressure upon other points already little able to resist it.

But the great safety of the operation would be of comparatively little importance if the character of the blood products, as I have described them, should prevent electrolysis from having a permanent or satisfactory result, and it must be confessed that there is a tendency for the benefits derived to be merely temporary. To obtain a fair idea of the value of electrolysis in aneurism it is necessary to have regard to the two varieties, internal and external. The operation has been performed far oftener in thoracic aneurism than in all others put together, partly no doubt from the greater frequency of internal aneurism, but partly also because the relation of electrolysis to other forms of treatment is very different in the two varieties. Take first thoracic aneurism. A not uncommon experience is the following:—The secondary sac of an aortic aneurism projecting through the chest-wall is rapidly enlarging and threatens external hemorrhage. By the end of the operation the forcible and expansile pulsation is reduced to a mere heave, and sometimes even that has next day almost disappeared. A certain diminution in size follows, but after a few days the pulsation becomes again more distinct, and if nothing be done the former condition is slowly resumed. In one case, indeed, this temporary effect was so evanescent that after three operations I thought it useless to persevere, and the patient ultimately died of external hemorrhage. In it, however, the disease had advanced so far that a portion of the sac was already blue and thin, and it is precisely when the sac is incapable of contracting *pari passu* with the shrinkage of the clot that this merely temporary improvement is most often seen.

Per contra an exactly opposite result followed in a case where the wall of a secondary sac was already gangrenous over a space the size of a penny, and actually burst and emitted gas and froth during the operation. The swelling, larger than a fist, slowly

disappeared, the pulsation never returned, and the patient died six months afterwards from empyæma produced by internal pressure.

We have then four results, which occur in my experience with different degrees of frequency.

1. The products are so soluble and evanescent that practically no benefit is produced by the operation.

2. The benefit, though only temporary, is yet of sufficient duration to enable us, by repeating the operation, to prevent increase of the portion of the tumour outside the thorax, and the threatened external hemorrhage.

3. The external sac is entirely occluded, but the internal portion of the aneurism advances as before, it may be in some more rapidly.

4. Steady improvement sets in, and the whole aneurism diminishes in size, and sometimes even disappears.

Of these the first and fourth are rare, the second and third about equally common. I have had two cases of complete failure, and one in which apparent cure resulted, but I have had many in which impending death from hemorrhage was averted, and the patient's life undoubtedly, and sometimes greatly prolonged.

If with these data in view one endeavours to assess the value of electrolysis in thoracic aneurism, it is proper to ascertain the position it ought to hold with regard to other remedies as well as the class of case to which it is applicable. And, in the first place, no one can doubt that a thorough trial must be given to rest and other remedies which lower the frequency and force of the cardiac impulse. Failure assuredly would show that the resiliency of the aneurismal wall and the quality of the blood were such as to be unfavourable for any mode of treatment, but the safety and proved efficacy of these medical remedies assure them precedence.—*Edinburgh Medical Journal, April* 1886, *p.* 898.

57.—ON THE TREATMENT OF VARIX.

By John Duncan, M.D., LL.D., F.R.C.S., Edinburgh.

With a clear view of the pathology, the application of the recognised forms of treatment becomes easy. Two principles guide us—to diminish the internal pressure, and to strengthen the external resistance. Of these the former is the more important, and too much neglected. Leaving aside the removal of all forms of obstruction as far as may be, there are very few cases of varicosity which cannot be reduced to manageable dimensions by absolute and prolonged recumbency with the leg elevated above the body. Thereafter the application of elastic support during the day, and elevation of the limb during the night will secure the comfort of the patient.

But there are a few cases in which the condition has been allowed to attain a large development, or in which the varicosity

is very definitely limited to a single vein. In the former, the value of elastic pressure may be much increased, in the latter the normal state of the limb may be almost restored by obliteration of the diseased trunks. It has been urged that to do so is to throw a greater strain upon the other channels. But it has been already shown that a demand merely for conveyance of a larger quantity of blood is met easily by simple dilatation, and does not tend to produce varix. Practically, moreover, experience coincides with the true pathology.

There are many methods whereby this obliteration has been attempted. The only one which is definitely and assuredly successful is excision. But that operation is necessarily one of considerable severity, involving an incision and dissection many inches in length, and surgeons generally have preferred to resort to less severe remedies, especially in cases where many venous branches are involved.

The method of subcutaneous ligature by catgut which I introduced some years ago still appears to me the best, whether in varix or varicocele. A more extended experience has modified very slightly the views I had adopted on the strength of my first few cases. The catgut thread is passed first completely under the vein, and then by the same openings between it and the skin. After it has been knotted and cut short, the knot is buried by forcible traction on the skin. It is necessary that the catgut be strong enough to bear considerable strain, and so prepared that it shall remain unabsorbed for a considerable time.

In a large number of cases I have met with suppuration only twice. In one a ligature was placed on a vein over the patella, and the suppuration was caused by the patient's getting up and moving about. In the other, by some mischance, I omitted to bury the knot and effectively cover it with wool and collodion. Fortunately, in neither did any harm result, but it is impossible to insist too strongly on the strictest antiseptic precautions in an operation dealing with veins. The last of these cases I have just seen, four years after the operation, on account of a small ulcer. The dilated condition of the minute venous radicles in the skin, which is always an important factor in the production of ulcer, remains, but the chief veins are entirely obliterated.

Although free from risk, ligature is liable to that failure which attaches to all operations which involve merely section of the vessel. A vein has a wonderful capacity for restoring its lost lumen. I endeavoured to provide against this, by advising that two ligatures be placed about an inch apart on each vein. For some time I found this quite satisfactory, but it is, I now know, not always absolutely reliable. I have of late, therefore, multiplied the number of stitches considerably, and so far have been pleased with the result. I also advised, where the veins were numerous,

that a careful study should be made of their anastomoses, and the ligatures placed accordingly. By multiplication of ligatures, I am now in this respect also more successful, but I am inclined to think that in a few cases it will continue to be necessary to perform the operation a second time on channels that may have escaped notice at first.

It is an operation always very easy in varicocele, but in varix of the leg the amount of inflammation may sometimes make it difficult to draw the skin over the knot. A week's recumbency is sufficient to bring about a condition of texture sufficiently relaxed for the purpose. When the scrotum is much elongated and relaxed, it may in some cases be advisable to remove a portion of skin. If that be so, the isolation of the veins from the cord and artery is of course greatly facilitated. It is not difficult to distinguish them in any case, but, of course, when the sense of sight aids that of touch, precision is increased. I aim at including all the veins of the cord. The circulation is carried on by the superficial veins of the scrotum, which somewhat enlarge.

As I have already said, operative interference should not be undertaken unless other remedies fail, and the disease is a serious source of trouble to the patient. But when that is so, I have found this plan less severe than excision, and preferable in certainty and in safety to incision, external ligature, or coagulants. I have tried electrolysis, following Schuh, but have found a difficulty, both with it and with carbolic acid injection, in doing enough without doing too much.—*Edinburgh Medical Journal, April* 1886 *p.* 905.

58.—THE TREATMENT OF VARICOSE VEINS BY INCISION.

By Kendal Franks, M.D., F.R.C.S.I., Surgeon to the Adelaide Hospital, Dublin.

[The author believes that the state of the walls of the veins in question will always afford a certain indication of the extrinsic or intrinsic origin of their diseased condition. Varices with thickened walls are due to changes arising in the veins themselves, while those with thinned walls are due to causes acting at a distance, such as cardiac disease, hepatic obstruction, pregnancy, and others. It is only in the treatment of the former class of cases that Mr. Franks would recommend excision.]

This is no new method; the only novelty in it consists in providing for and anticipating the dangers to which the method was liable from septic contamination of the wound.

Under the former methods of dealing with wounds, these dangers and risks were by no means imaginary, and it was not without reason that surgeons held veins in most respectful awe. But these very dangers are the dangers which the antiseptic sys-

tem, when fully carried out, abolishes, and under its protective influence veins are treated with no more respect or fear than any other tissue of the body. I have twice tied up an opening in the internal jugular vein occurring accidentally during the course of an operation, and once in the axillary vein when removing cancerous glands, without any trouble following; and in the treatment of varicose veins in the legs I excise them with the conviction that I am thereby exposing the patient to no greater risk than if they were left alone.

I will not enter into the details of the cases in which I have operated. I have full notes of eighteen cases which I have treated by antiseptic excision, besides several cases the notes of which I have not preserved. In no case have I seen "phlebitis, erysipelas, or pyæmia" follow as a result. Let me describe to you the method of operating. The patient being placed under the influence of ether, I begin by shaving the parts where I purpose to make the incisions. The skin is then carefully washed with corrosive sublimate solution; sometimes oil of eucalyptus is also used. I then usually fasten a band round the limb, immediately above the knee, so as to distend the veins sufficiently to be able to trace them accurately. I know some surgeons prefer to apply an Esmarch's bandage to empty the limb of blood, having previously marked out the veins with ink. This I do not think a good plan. In the first place, the ink is very liable to be washed out during the cleansing process; and, moreover, it is easier to secure *all* bleeding points when they can be seen. If the veins in the limb are extensively varicose, it is much better practice to excise the chief radicals at intervals, removing two or three inches at each place, than to attempt to excise a long piece of vein. Nothing is gained by the more extensive incision. Having selected the place for incision, a clean cut is made through the skin, and almost immediately the swollen vein appears. The subcutaneous tissue over it is divided on a director. Should the vein be cut, it is at once seized with Sir Spencer Wells' forceps. A strong catgut ligature is passed round the vein at its lower end. The vein above this is seized with forceps, and the vein divided between the forceps and the ligature. It can then be easily pulled out of its bed. Any radicals going into it are ligatured and cut off; finally, the vein is tied at the upper angle of the wound and the piece excised. When the veins are tough with hypertrophied coats, the proceeding is very simple; but when the veins are thin, especially if adhering to the skin, a good deal of care and patience are required. The wound is irrigated with corrosive sublimate solution, 1 in 2,000, a little iodoform dusted over it, and the edges brought together. In my earlier cases I used to insert a drainage tube, but I now think it is quite unnecessary. The wound is then enveloped in some of the antiseptic dressing, whilst a second and a

third piece of the vein is treated in the same way, if necessary. If both legs are involved, the second leg is treated in the same way at the same time. Both legs are then bandaged from the toes to above the knee. As a rule, the dressings are left undisturbed for eight or ten days, and when removed we generally find the wounds healed by first intention. In a few cases some suppuration occurred, but this was generally traced to some deficiency in the dressings, at a time when the dressings were improperly prepared. This only delayed the process of healing, but in every case the asepsis of the wound had been sufficient to protect the veins from contamination.

Let me say a few words as to the permanency of the cure. Most of the writers on this subject are of opinion that the disease is incurable, and that the most to be expected from it is temporary relief, and, in fact, that the game is not worth the candle. Let us observe, however, that these conclusions are drawn from those other methods of treatment, which I have shown are in many ways defective. Since antiseptic excision has begun to be adopted, within the past ten years, we find on record many cases of cure, which have lasted over one, two, or more years, and this has been my own experience. If the varicose condition of the veins is due to a cause which we cannot hope to rectify—an extrinsic cause—we cannot expect operation to be successful. But when we can remove the cause, and when, at the same time, we treat the effect, I consider that we have just grounds for assuming that the cure will be radical. Two years ago I operated on a young man, aged twenty-six, for extensive varices of one leg. A year and a half later he wrote to me to express his great delight at the permanency of the cure; that since the operation had been performed he had been able to take long walks, to stand the greater portion of the day without the slightest inconvenience, or without any sign of fresh varices appearing.—*Dublin Journal of Med. Science, May*, 1886, *p.* 417.

ORGANS OF RESPIRATION.

59.—ON SOME FORMS OF NASAL OBSTRUCTION.

By G. A. Wright, F.R.C.S., Assistant Surgeon Royal Infirmary; Surgeon to the Children's Hospital, Manchester.

There is a striking and uniform deficiency in the general text books and in the special treatises upon diseases of the nose, such as Spencer Watson, Morell Mackenzie, and Solis Cohen, in their accounts of nasal obstruction due to thickening or hyperchondrosis of the septal cartilage; the two former specialists pass over the affection altogether, and the latter only just mentions it. This condition is, however, one deserving of attention, for in the first place it may give rise to much discomfort, and in the second place

it is sometimes mistaken for another affection, that of deviation of the septum. It was first brought prominently to my notice by a case which had been for a year undergoing treatment by a distinguished surgeon for the ordinary septal deviation, and necessarily without result. Since then I have had occasion to operate on another case, and have seen one or two more, while in its slighter degrees I believe it to be a not uncommon condition.

My first patient was a lad of 14 years old, who had received a blow upon the nose from a cricket ball two years before I saw him. Six months afterwards he began to complain of obstruction in the right nostril, and the common symptom of snoring at night was noticed. The shape of the nose was altered—it was lopsided—and there was an obvious projection into the front of the right nostril. There was no deafness nor pain, but some catarrh. For twelve months before he came to me he had worn Adams's plugs without any improvement. On examining him I found a sharp projection of the lower and front part of the septum into the right nostril, but on looking into the left side there was no corresponding depression, but rather a slight prominence there also. There was some thickening of the mucous membrane over the septum, and he had also a little post-nasal adenoid overgrowth, but not much. The obstruction was not complete. It was clear that this was not a case of septal deviation, or there would have been a concavity on the left side; it was not a case of dislocation of the cartilage from the nasal spine; and it was not a fracture of the septum with overlapping of the fragments. I dissected up the mucous membrane which was thickened, except at the apex of the protrusion, where it was thin and pale from pressure of the underlying cartilage. When the septum was exposed I shaved off the projection, removing a piece about the size of half a split pea, brought down the mucous flap over it, and closed the wound with horsehair sutures. The wound healed up at once, and he was quite relieved. When I saw him last, about ten weeks after the operation, he was quite well, the passage was clear, there was no catarrh, and he had ceased to snore.

This ecchondrosis or hyperchondrosis then appears in some instances to be the result of injury, just as other growths may occur from the same cause, and in other cases it comes on spontaneously, or may be congenital. It is distinguished from deviation of the septum by examination of the other side, and from mere mucous thickening by its hardness and sharp outline. I do not think any treatment except removal is likely to have any effect. In my first case there was no sign of re-growth after ten weeks.

The second form of obstruction to which I would call your attention is the better known and more fully described one of deviation of the cartilaginous septum as opposed to the bony partition. I have had occasion to operate on several of these cases

within the last two years, and other cases have come under the care of my colleagues.

The first case is that of a lad of 15 years old, who fractured his nasal bones in May, 1883, but had some slight nasal obstruction before the accident. This, however, subsequently increased until within two or three months of the time I saw him. Since then it had become stationary. His nasal bones were somewhat thickened, and the septum was deviated to the right, leaving only a narrow passage through which air passed, though not freely. His voice was slightly nasal, and he had the other usual symptoms of nasal obstruction. I employed first a spring nasal clip, which he wore for about a month, but was little if at all improved by it. He then had to leave Manchester, but returned two and a half months later. I then straightened the septum forcibly with Adams's forceps; he wore a spring Fraenkel's speculum for four days, and subsequently ivory plugs, for the first few weeks keeping them in day and night, and afterwards at night only. A fortnight after the operation the nose was quite straight, and four months later he remained well.

The other cases presented much the same features, and were treated in the same way, except that in some Walsham's plugs were used instead of Adams's, the former having the advantage of being hollow, and of allowing, therefore, nasal respiration. They are also more nearly the actual shape of the nasal cavity.

The principal point to which I should like to draw attention is that obstruction from deviation of the septum appears to arise in several different ways. First, it may be congenital, though this is more commonly seen in the bony than in the cartilaginous septum; next, it may be the result of fracture of the septum, or dislocation, from either the ethmoid and vomer, or from the nasal spine of the upper jaw below; and, lastly, it may be, as in my second case, not an immediate result of the accident, but apparently produced by a chronic perichondritis, which results in softening and subsequent deviation of a local patch of the septum. If the whole cartilage were affected there would be some flattening of the end of the nose; this, however, does not usually occur. In the first case there was possibly some congenital crookedness, and this was increased by actual displacement due to the accident.

As regards treatment, Mr. Adams's plan is all that can be desired, though I find a pair of padded sequestrum forceps do just as well as his special instrument, while a piece cut from the handle of a toothbrush answered all purposes as a plug in my hospital patient. In some instances there is external deformity of the nose from fracture or displacement of the nasal bones as well, and in one instance a zig-zag deformity of the septum caused flattening of the tip of the nose and projection into both nostrils.—*Medical Chronicle, July* 1886, *p.* 302.

ALIMENTARY CANAL.

60.—ON PHTHISIS AND FISTULA-IN-ANO.

By W. Mitchell Banks, F.R.C.S., Surg. to the Royal Infirmary, and Professor of Anatomy, University College, Liverpool.

[Mr. Banks, in answer to his own questions, "Why do consumptives get fistula?" and "Should they be operated upon?" says:]

With regard to the first question, so good an authority as Mr. Richard Quain was evidently disposed to take the word of Andral and Louis that consumptives did not get fistula more commonly than other people. But general experience is decidedly against this view, and in favour of the one that phthisical subjects suffer from it in a much greater proportion than other people. Mr. Allingham, whose observations on the question are characterised by great sagacity, and fortified by most extensive experience, speaking from the statistics of his private practice for six years, found that about one in every six persons who had fistula was either distinctly consumptive or was markedly predisposed in that way. Admitting, then, their greater liability, what is the reason for it? Why have they abscesses in the ischio-rectal fossa, and not in the axilla? I do not believe these abscesses arise in deposits of tubercular matter, and as for tubercular ulceration of the rectum causing them, I never once saw a rectal ulcer in connection with a phthisical fistula. Mr. Allingham thinks the loss of fat in the fossæ may have something to do with it, combined with the fact that, owing to the veins having to sustain a considerable column of blood, and being in addition exceedingly ill supported, local congestions and feebleness of circulation must be a common condition. This may be so, but it is, after all, rather a halting reason. The fact remains, even if we cannot find a reason for it. Believing, as we do at present, in the possibility of lung disease being propagated from caseous tubercular glands, is it beyond the bounds of reason to imagine an ischio-rectal abscess not so much to be a concomitant of phthisis as a precursor: being, in fact, the original source of a septic absorption, which might start a lung disease in a person with a phthisical tendency?

In the next place, should we operate upon a phthisical patient? Forty years ago it was a canon of surgery that this was not to be done, and for two reasons. In the first place, if the wound healed, then the discharge would cease, which would make matters worse. This, of course, is absolute nonsense. We have ceased to believe in improving the condition of consumptives by taking so much pus from them per diem. The next reason was that the wound generally did not heal. Now, this is true when the phthisis is far advanced, but it is certainly not true in the early stages. Taking the case of a man in the last stage of the

disease, who probably has but a few weeks to live, and who has a fistula with a gaping mouth and thin blue livid skin around it, it would be nonsense to operate upon him. Not that it would probably do him any great harm, but it would do him no good, and to do operations from which no good is to come is always a mistake. But, on the other hand, in the early stages, and while the patient has anything like a reasonable amount of strength, I think it most imperative to stop all exhausting discharge, and have, as a matter of practice, found the healing of the wound to go on just as well as in other people. The same principle holds good here that applies to the case of amputating a thigh for a strumous knee-joint in a consumptive patient. The amputation is worse than useless—it may be fatal—if the patient is too far gone. But if he has strength enough to survive the operation, the removal of a source of pain and weakness may have a markedly beneficial result on his phthisis.

It may seem that this is only a matter of common sense, and no doubt it is so, but there are certain surgical prejudices which seem to have laid a very firm grasp upon the minds of men in general practice, and this question is one of them. Indeed, I would not have adverted to it, but for the fact that the prejudice stills holds a strong sway.—*Liverpool Med.-Chir. Journal, July* 1886, *p.* 287.

61.—ON THE PALLIATIVE TREATMENT OF HEMORRHOIDS.

By W. Mitchell Banks, F.R.C.S., Liverpool.

In the way of palliative treatment, one of the best local remedies is hamamelis, which can be made up as an ointment. After this the usual gall and opium ointment is as good as any. I have tried gallic and tannic acid suppositories, which *a priori* one would have expected to work admirably, but most of the patients complained of pain being produced by them, even when they were by no means very strong.

Prussian liquorice powder, or the old-fashioned "Chelsea pensioner," are, to my way of thinking, far better aperients for a patient who is bothered with piles than the modern purgative mineral waters. The action of all of these is nearly the same, varying in intensity. When taken with hot water, the first thing in the morning, they produce a sharp, sudden, and copious burst of watery motion either before or after breakfast, and that is generally followed in the course of the forenoon by one, or perhaps two, small squirting motions, very apt to be accompanied by a good deal of straining, with a feeling of something more to come when there is nothing. This kind of purgation is just the thing to do damage to a man with intermediate hemorrhoids. While straining, he feels a sharp pricking pain; a varicose vein, overstrained, yields and fills with blood-clot, and in an hour or two the

patient becomes conscious of a little swelling like a blackberry, which keeps coming outside as often as it is pushed up.

Why do not English lecturers and text-books tell students more about the value of enemata? A Frenchman looks upon his enema very much in the light in which an Englishman regards his tub; and a most excellent and cleanly thing it is. But our silly false modesty has induced us to attach something almost of indecency to this very innocent operation. I find some eminently respectable persons who are quite shocked at being asked to employ so un-English a remedy. And again, the public have got an idea in their heads, fostered chiefly by medical men, that the frequent use of enemata produces distension and subsequent paralysis of the gut, and is consequently a very dangerous thing. I suppose, if a man were to throw a quart of water into his rectum, and try to walk about with it there all day, that he would do himself mischief, but that the occasional use of eight or ten ounces of tepid water can do anybody any harm, however long the habit may be kept up, I do not believe. A vast number of people are always purging themselves for constipation, in whom I believe the fæculent mass is lying in the rectum, quite ready to move on, if only the bowels could effect its expulsion. The introduction of a little warm water at once lubricates the canal, and gives the gut the stimulus to a smart contraction, which is all it wants.

The use of cold water to piles is a most valuable thing, but the majority of persons do not know how to employ it at all. Having had the usual action of the bowels, the patient almost always rises up and then goes to a basin, sits down over it, and throws up cold water, chiefly on to his nates and external sphincter. Now, during defæcation the hemorrhoidal venous circlet around the anal margin is fully dilated, and the mucous membrane above it slightly everted. This condition lasts for a short time, even after the action is finished, until the patient draws himself up or rises. A patient of mine discovered for himself that the proper time to apply cold water to his piles was when they were down, and not when he had drawn them up. So as soon as the bowel was evacuated he remained perfectly still, emptied the pan of the water closet, and keeping the rush of water on with his right hand, he threw it up with his left on to the everted mucous membrane. By this means he thoroughly cleansed his piles, and by the direct application of the cold water to them, ensured contraction of their blood-vessels and their complete retraction. Carefully drying the parts with a soft towel (and not using paper), he then washed his hands and was comfortable for the rest of the day.

This mystery I have communicated to a great many patients, who have derived much comfort from it. Doubtless there is a certain want of dignity about the proceeding which renders its description a difficult matter to put in a text-book, but that does

not prevent its being a very valuable point in treatment, and one which makes all the difference between the useful and the useless employment of an excellent remedy.

If a man of middle age, who is beginning to be bothered with piles, will be moderate in his stimulants, will use an enema of tepid water frequently, will apply cold water after his motion in the way I have described, and will then employ a little hamamelis ointment, he will almost infallibly save himself from getting so bad as to require operation. But what generally happens is that the patient, being somewhat costive, strains severely, and brings down his piles; they are not thoroughly cleansed, and only imperfectly replaced. In this condition he possibly stands on his feet through a long day, and by evening he feels uncomfortable about his seat. Next morning he takes a dose of mineral water, and has two or three sharp evacuations with more straining, with the result that after another day's attempt to get about, he is obliged to lay up with an inflamed pile, probably with a clot in its centre, which cannot be got to stay up, and which is exquisitely tender.

What is the best thing to apply to inflamed piles? I believe in a cold poultice made from quite stale bread with water. A good wedge of this material, thrust in between the nates and kept tightly in position by a perineal band, both soothes and supports the piles. I remember Mr. Savory vaunting the praises of the bread poultice in an address to the British Medical Association at Cork some years ago. Some people thought it rather a trivial kind of thing to talk about, but I felt that so good and scientific a surgeon would not talk about bread poultices unless they were of more use than people had hitherto believed. I have found them most valuable. A bread poultice shrivels and contracts parts, and does not encourage suppuration, while at the same time giving plenty of comfort. A linseed poultice, on the other hand, makes parts red and swollen, and produces suppuration.

There are some people, almost invariably elderly ladies, who are sadly plagued by their piles, but will not on any account have them operated upon. So many fads have been recently promulgated that an old-fashioned remedy has fallen into unmerited desuetude—I mean the application of strong nitric acid. When carefully managed, the acid causes hardly any pain, and tolerably effectually withers up moderate hemorrhoids. Of all the intermediate terms of treatment between complete removal and mere palliation, I think there is none so satisfactory as the fuming nitric acid cautiously employed. Of course, I do not mean to say it is of avail in really serious cases where the piles are large. For such nothing will do but complete removal. But I think it is the best thing to try when you are barred from operation.—*Liverpool Med.-Chir. Journal, July* 1886, *p.* 292.

62.—ON THE TREATMENT OF PRURITUS ANI.

By W. Mitchell Banks, F.R.C.S., Liverpool.

I have been rather struck with the frequency of pruritus among the better classes of society as compared with the hospital classes. Out of 4,000 cases occurring at St. Mark's Hospital in London, under the care of Mr. Allingham, only 180 were cases of pruritus. And we may be sure that a very large proportion of all the cases in London would be sure to find their way to a special hospital. I see plenty of cases of piles and fistula at the Liverpool Royal Infirmary, but I cannot get hold of a genuine good case of pruritus, whereas in private practice they are by no means uncommon. Cleanliness then can have nothing much to do with it in point of causation. Again, while probably showing a predilection for those who eat and drink too much, it assails people of very different appearance and habits. I cannot help thinking that it is in many essentially a gouty condition, and I found a course at Homburg do one patient great good;—indeed, it practically cured her, after everything else had failed.

There is a method of treatment which I do not think is spoken of in books, but which I have tried in two or three cases with great success. This consists in anæsthetising the patient, and then with the big bulb of a thermo-cautery, heated to a white heat, lightly running over the whole affected surface, so as to produce a superficial burn. This seems a rather severe remedy, but then the disease is sometimes a very dreadful one, and makes the lives of its victims almost intolerable. Now, the look of the cautery is much worse than the reality, and a bit of lint kept moist with a solution of carbonate of soda, soon takes the smarting away. I do not know if others have tried this plan, but it is an excellent one, and may be resorted to with tolerable confidence in aggravated cases. Deep cauterisation is not required, merely a superficial frizzling.—*Liverpool Med.-Chir. Journal, July* 1886, *p.* 295.

63.—ON ABDOMINAL SECTION FOR DISPLACED HERNIA.

By Edward Ward, M.A., B.C. Cantab., Senior Assistant Surgeon to the Leeds General Infirmary.

[After a most interesting narrative of a case of displaced inguinal hernia, in which laparotomy was performed with a completely successful result, Mr. Ward makes the following comments.]

A noticeable feature in the history of the case was its close resemblance in every point to the classical descriptions of this condition; an oblique inguinal hernia of long standing; the patient in the habit of reducing it himself; the hernia reduced by the patient at the time of the accident, without anything unusual being noticed; and subsequently the irregularity, and for a time the

comparative mildness, of the symptoms, with prolonged intermissions. I believe that it is next to impossible for reduction *en masse* to occur under the taxis of a surgeon who has been instructed in the merest rudiments of his art; and that it is always caused by forcible squeezing, and pushing and kneading over the fundus of the tumour, without any steadying or support of its neck; and after frequently observing patients go through this performance by way of demonstrating how a hernia should *not* be reduced, my chief wonder is that, displacement being possible, it is not an occurrence of much greater frequency.

With regard to the operation, it appears to me that the arguments in favour of a median abdominal incision infinitely outweigh any that can be urged against it. It makes the operation simple, easy, precise, and safe. There is no danger of wounding any large vessels or important anatomical structure; the trifling hemorrhage is within view and absolutely under control; the diagnosis is either verified or negatived at once without difficulty, and if it should prove to have been at fault the abdominal cavity may be thoroughly explored for other causes of obstruction; besides this, the constricting band is much more easily reached and divided. Luke's description of the operation, which he performed almost half a century ago, is practically copied into all the modern text-books, and a few extracts from it may illustrate its disadvantages:—"An opening between three and four inches in extent was made . . . . The canal was next laid open by a division of the tendon of the external oblique muscle . . . . freely dividing the margin of the internal ring . . . . The sac should in all instances be opened, and its neck freely divided . . . . The extensive division of the abdominal parietes rendered extra precautions necessary against reprotrusion of the intestines."

But it is argued that this exploratory operation does not necessarily involve incision of the peritoneum before reduction *en masse* can be negatived. This may be true, but in that case what is gained? The patient has been subjected to an operation which in itself is not devoid of danger, which must necessarily reduce his powers, which has advanced the agnosis by a mere fragment of negative evidence, and which has left him unrelieved. What then, surgically speaking, remains? Laparotomy. If, however, a displaced hernia should be found, it can only be relieved by a peritoneal section in a situation where its risks are greater and its management more difficult. It may be said against laparotomy that it precludes any attempt at radical cure; but this, under such circumstances, is surely a minor consideration; and it is interesting to notice that the patient whose case is described above has not yet been troubled by any reappearance of his hernia. If the gut should be gangrenous, opening the sac into the general peritoneal cavity would appear to mean certain death from septic peritonitis;

but we have apparently not yet thoroughly explored the resources of antiseptics, peritoneal irrigation, and enterorrhaphy; and I am not aware that there is any case on record in which a patient suffering from displaced hernia in which gangrene had supervened has ever recovered under any method of treatment.—*Lancet, July* 31 1886, *p.* 202.

64.—ON INDICATIONS FOR LAPAROTOMY IN INJURIES OF THE ABDOMINAL VISCERA.

By Frederic S. Dennis, M.D., Professor of Surgery in Bellevue Hospital College, New York.

[Dr. Dennis publishes, in the Medical News for Feb. 27th and March 6th, a most important paper upon the Treatment of Traumatic Lesions of the Abdominal Viscera by Laparotomy, and although the exhaustive character of the communication carries it somewhat beyond the scope of *The Retrospect*, it would seem desirable to draw attention to some of the many points of practical interest with which it deals. During the last ten years no less than 22 cases of perforating wounds, gunshot wounds, and ruptures of the abdominal viscera have come mainly directly under Dr. Dennis's observation. Seventeen of the cases occurred during the last five years. As the title of the paper indicates, the cases are brought forward with the view of supporting the author's advocacy of laparotomy as a method of treatment in such cases, a method which, however, was pursued in only three instances in the series. Two of the three were fatal; in one resection of the gut was made; and in the other, five intestinal wounds were sutured. The third case, in which recovery took place, was that of a man who had been stabbed in the abdomen. A finger-shaped piece of omentum protruded through the wound. Three hours afterwards the abdomen was opened by mesial incision, and all the viscera examined "inch by inch," the proceeding occupying half an hour. No wound of any viscus was discovered. The writer says the abdominal section in this case was the first exploratory laparotomy he could find in surgery where the operation had been performed in stab wound of the abdomen, without the previous knowledge of any wound within the peritoneal cavity, and without the protrusion of the gut. The question of laparotomy is treated under three heads—1. In penetrating stab wounds; 2. In penetrating gunshot wounds; 3. In rupture of the intestine. Under the first heading eleven cases are dealt with, including the three cases already referred to, in which laparotomy was performed, and a fourth case in which the original wound was enlarged to permit examination of the portions of intestine adjacent to a protrusion bearing two wounds which had been closed by sutures. This case made a good recovery. Of the other seven cases in which no

operation was performed, three recovered and four died. The three non-fatal cases were as follows:—1. Five feet of intestine protruded; no wound of gut. 2. Many feet of intestine protruded; no wound of gut. 3. (This is a remarkable case). The patient was stabbed in the 7th intercostal space below the nipple. He vomited blood (once ten ounces) several times immediately after the injury. Upon this the diagnosis of perforating wound of the stomach was based, and from this the patient recovered. Dr. Dennis states his conclusions as follows.]

1st. That penetrating stab wounds of the abdomen are less fatal than penetrating gunshot wounds, but that the former are fatal in too great numbers to content us with the older methods of treatment.

2nd. That if the stab wound has injured the intestine or any abdominal organ, laparotomy is indicated. That it may be indicated also in cases where the gut is not penetrated, but where the gut may become twisted as a result of the stab wound.

3rd. That in a penetrating stab wound regarding which doubt exists, the diagnosis should be made certain at once, in order to pursue a proper line of treatment. The indications for laparotomy should be extended also to injuries of any organs within the abdomen.

4th. That laparotomy offers no great additional danger to the patient, if properly performed under the strictest antiseptic precautions.

5th. That while the number of exploratory laparotomies in stab wounds of the abdomen afford insufficient data upon which to establish any fixed rule of practice, the same principle which is recognised in the performance of laparotomy for gunshot wounds of the abdomen is also applicable to penetrating stab wounds.

6th. That the enlargement of the original wound for an examination of the peritoneal cavity will not enable the surgeon to exclude in all cases fæcal extravasation, perforation, volvulus, or hemorrhage. These may all exist, and no evidences of their presence be manifest upon inspection through a small opening. My own experience accords with that of Prof. Weir, that enlarging the wound may or may not offer the essential knowledge.

7th. The size, shape, character, and velocity of the bullet, the attitude of the patient, the kind of weapon used to produce a stab wound, seem to me to influence the question of laparotomy. Any and all of these injuries are likely to produce perforation; and if there is any value in abdominal section, it should be promptly performed, irrespective of the facts connected with the penetrating abdominal wounds.

8th. It is possible to have a fatal hemorrhage from the large venous trunks in the abdomen, and this hemorrhage not be discovered until the cavity is about to be closed, when an attempt is made to sponge out the bottom of the peritoneal cavity. This has occurred to me in two cases, in one of which I had closed seven

openings, and in the other I had examined the viscera in the cavity. The hemorrhage was checked at the time of the opening, and was not apparent until the close of the operation.

9th. That the sutures, if properly applied, will close the perforation in every case, no matter how lacerated these wounds are. The sutures will close the wound in case of resection of the gut, so that no leakage will occur if water is forced through the sutured intestine.

10th. The success of laparotomy is to be attained where every arrangement is complete and perfect. Everything depends upon the preparation which is made for this operation, and the antiseptic conditions under which it is performed. The shock, the perforations, the resections of injured parts of the canal, and the after-treatment, are all important steps in this great operation; but the one obstacle yet to be overcome in the management of these cases is the control of the hemorrhage from large venous trunks, and until this object is accomplished, the science of surgery in this operation cannot be said to have arrived at a state of perfection.

In the present unsettled state of opinion, it would seem best not to perform this operation in medico-legal cases without the full sanction and support of a consultation. The courts of law have recently agitated the question of the propriety and the justifiability of this measure in penetrating wounds, and the legal profession have already upon several occasions, to my personal knowledge, found refuge in this operation to defend a criminal on trial for murder.

When laparotomy is placed among the well-recognised operations in surgery, and when all opposition to it has ceased, the credit of this great achievement will be due to the influence of the writings and teaching of the late Prof. Gross. As far back as 1843, he said in his monograph on the Nature and Treatment of Wounds of the Intestines:—"Here the most prompt and decisive measures must be resorted to, or the person will perish from peritoneal inflammation. It will not do for the surgeon to fold his arms and look upon the scene as an idle and uninterested spectator. Far otherwise. He has a duty to perform, and that duty consists in dilating the external wound if it be not already sufficiently large, in hooking up the injured bowel, and in closing the solution with the requisite number of stitches, at the same time that the effused mater is carefully removed with tepid water and a soft sponge."

The remarks of the late Dr. J. Marion Sims gave new impulse to these views enunciated by Dr. Gross nearly half a century ago, and these theoretical opinions were again supplemented by the distinguished work of Dr. Parkes, of Chicago, who made a practical application of the theory in his researches and experi-

ments upon lower animals. It remained for Dr. Bull to make the practical application of this knowledge available to higher uses, and thus, step by step, through nearly half a century, we have arrived at the accomplishment of our object. It is a source of national pride, that laparotomy in penetrating wounds and visceral injuries of the abdomen was conceived, developed, and perfected in America.—*Philadelphia Medical News, March* 6, *p.* 262.

65.—ON THE DIAGNOSIS OF INJURY TO THE ABDOMINAL VISCERA.

By Frederic S. Dennis, M.D., New York.

The diagnosis of injury to the abdominal viscera is a most important subject of study. With the exception of two signs, the diagnosis is to be arrived at by a study of the group of symptoms, any single one may be corroborative; but all of which, taken collectively, afford sufficiently positive evidence of injury to justify a surgeon in performing a laparotomy. The extravasation of the contents of the intestine in the wound, and the presence of emphysema in the adjacent tissues, may be said to be pathognomonic. There is, however, in addition to extravasation and emphysema, a chain of symptoms which has an important influence upon the subject of diagnosis.

Extravasation of fæcal matter.—This is a positive sign and admits of no exception. Whenever fæcal matter is seen at the wound, it is proof that the intestine has been wounded. If the extravasation takes place within the peritoneal cavity, this sign is of no value until the abdominal cavity is explored.

Emphysema of tissues.—This sign is also a positive one, and consists of the escape of gas from the intestine into the surrounding tissues, especially into the retroperitoneal, cellular, and connective tissue. This condition must not be confounded with an emphysema incident to an injury of the lung, which gives rise to the presence of air under the skin, and which might coexist with a penetrating abdominal wound, or from emphysema, a result of gangrene of tissue from gas. In a penetrating stab or gunshot wound, emphysematous crackling is pathognomonic of perforation of the gut. I have seen this condition present in two cases of penetrating wound, and attach very great importance to the presence of this sign as evidence of a perforation of the gut.

Shock.—The amount of shock depends more upon the idiosyncrasy of the individual than upon the actual injury to the intestine or organs. The persistency of the shock is of greater diagnostic value than its severity. I had one patient who had ten perforations in his intestine, and he lived nearly forty hours, and up to within four hours of death had no shock that could not be explained by an ordinary surgical injury. There was nothing at

the outset that indicated perforation. The intestine is here upon the table, and it is a specimen which is of great value, taken in connection with the clinical history, because it demonstrates that it is possible not only to have one but a great many perforations of the intestine, and yet no shock be present sufficient to explain the condition. Absence of shock will not always exclude injury to the viscera; its presence, however, if persistent, is a strong link in the chain of evidence.

The question of shock as a symptom in penetrating wounds of the abdomen, is most important. My experience in many such cases has led me to believe that the shock is more apparent than real. This symptom in penetrating wounds is, to my mind, analogous to that observed in strangulated hernia. Both symptoms are manifestations of a depression of the sympathetic nervous system, and not the cerebro-spinal. No surgeon would hesitate to operate for the relief of a strangulated hernia because great shock was present. But in strangulated hernia the shock is due to a pressure upon the sympathetic nerves and ganglia which preside over the involuntary muscles of the alimentary canal. The shock is at once removed after the stricture is divided, and the patient's condition is immediately improved. In nearly fifty cases of strangulated hernia of which I have notes, and many of which have been sent to me through the kindness of Dr. Knight, of the Hospital for the Ruptured and Crippled, there are only three cases that I can find, where the patient died during or immediately after the operation. The shock in most of these fifty cases was as severe as in any case of stab or gunshot wound of the abdomen that I have seen. This condition of shock is precisely the same in the penetrating wounds, and I cannot find a case (excluding the three) in which the condition of the patient was not improved after the operation.

I do not mean to undervalue the symptom of shock; but I believe it is more apparent than real, and that its presence, even to a considerable degree, should not deter the conscientious surgeon from beginning a laparotomy. I feel sure that most of the cases in my list of penetrating wounds were improved, as regards the collapse, as soon as the peritoneal cavity was opened.

Thus, it is obvious that the presence or absence of shock affords no information to the surgeon as to direct injury of the intestine. There is one case reported by Taylor, where the duodenum was torn across, and the boy walked a mile, and died in thirteen hours. Another case is reported by Poland, where a man, after a rupture of the intestine, experienced so little shock that he walked to his bed and undressed himself. Key reports a case where a man continued to carry sacks of flour to a vessel after rupture of the intestine. Agnew relates still another case, where a patient was able to wheel a cart across the yard. In one case which I had, there were several openings in the gut, and little or no shock present.

The shock, then, may be present immediately, and death supervene within an hour, or it may be deferred for hours—in the meantime the patient walks about the room; or shock may be absent for a day or two, and then the patient dies in sudden collapse.

Tympanitic resonance over liver. This is a most important physical sign. It cannot be relied upon, however, as positive evidence of perforation. Liver flatness may be absent, and a tympanitic resonance be present, and yet other conditions than perforation may have brought about this change. Sudden distension of the colon, which may force the anterior border of the liver upward against the anterior wall of the chest, will, according to Prof. Janeway, cause the percussion note to be tympanitic over the normal area of liver flatness. In this event, the liver flatness is posteriorly greater than normal, provided that there is no marked emphysema of the lungs.

Persistence of liver dulness, or flatness on percussion, Prof. Flint regards as of much importance as evidence against perforation. He has found that the injection of a small quantity of air into the peritoneal cavity in the cadaver causes the hepatic dulness or flatness over the liver to disappear, a tympanitic resonance taking its place. Clinical observations have shown that gas escaping from an intestinal perforation gives rise to a tympanitic resonance in the hepatic region. A tympanitic resonance in this region, however, is not proof of the presence of air or gas in the peritoneal cavity, inasmuch as this resonance may be caused by the transmission of resonance from the colon above the lower margin of the liver. But, if dulness or flatness over the liver persists, it may be concluded with positiveness that the peritoneal cavity is free from air or gas.

Sudden meteorism.—This is another symptom which is of great value as a diagnostic sign. It is difficult to differentiate this condition, which may be caused by a perforation from the tympanites following acute peritonitis, which may develop in a few hours. It is the suddenness of the meteorism, as well as its persistency, which must be taken into consideration. It must be observed that sudden tympanites may result also from a blow upon or injury to the abdomen or spinal cord. This condition of tympanites is due to a paralysis of the muscular coats of the intestine, and must not be mistaken for tympanites over the liver, the result of perforation.

Subnormal temperature.—This symptom is generally present before peritonitis is developed, owing to the condition of collapse or shock in which the patient is usually found.

The *pulse* is rapid and feeble, and this sign is of great value. I have seen, in one case, the only thing pointing to a serious lesion in a penetrating wound was the great rapidity of the pulse and its feebleness. These characteristics of the pulse may be present in other injuries, but no serious lesion of the viscera can occur without a disturbance of the character of the pulse.

Fixed pain distinctly located.—This is also a valuable symptom taken in connection with others, but is of no value by itself. I have seen, lately, this symptom present to a marked degree in a case of strangulated hernia which had been reduced by taxis, and I suspected a continuance of the trouble which it was hoped was relieved by the taxis. The pain was intense, and was localized and persistent; but, after twenty-four hours, subsided under the influence of morphia, and the patient recovered.

Vomiting.—A symptom usually present in penetrating wounds, but one which is also present under so many other conditions that its value is only to be estimated in connection with the train of symptoms. Its absence will not exclude perforation; its presence is only corroborative proof.

Bloody stools.—A most valuable sign in perforation, but one seldom seen, as peristalsis seems to be suddenly arrested for a time in the alimentary canal below the seat of injury. I have never seen this symptom, but I find it described by others, and should place great reliance upon its presence.

Retention of urine.—This symptom varies, and to its presence no special importance can be attached. I have felt the bladder distended until it reached nearly to the umbilicus, and the patient was unconscious of the fact. The physician assured me that he had only just passed the catheter. A search should be made for albumen and for indican in cases where there is supposed perforation; the same as should be done in strangulation.

Anxious physiognomy is generally present in these visceral wounds, and the patient is extremely nervous. The patient's face is similar to that seen in cases of strangulated hernia or cholera.

The *respirations* are rapid and shallow, and for the most part thoracic. The muscles presiding over abdominal respirations are quiescent.

Acute peritonitis develops very soon after perforation or any visceral lesion. It may take only a few hours to develop. Its presence is, of course, most discouraging. As a symptom of perforation, the development of acute peritonitis is most significant.—*Medical News, March* 6, 1886, *p.* 259.

ORGANS OF URINE AND GENERATION.

66.—ON THE TREATMENT OF STRICTURE OF THE URETHRA BY ELECTROLYSIS.

By W. Bruce Clarke, M.A., F.R.C.S., Assistant Surgeon to St. Bartholomew's Hospital.

[After some general remarks upon the *modus operandi* of Electrolysis, and a description of the instruments used, Mr. Bruce Clarke speaks more directly of the applicability of the process to the treatment of urethral strictures.

The results of this method of treatment in Mr. Clarke's hands are given in a series of three tables appended to his paper. We give here a rough analysis of them. *Table* 1.—*Five cases in which no instrument would pass into the bladder before electrolysis was resorted to.* The average duration of treatment was 5·2 weeks. *Table* 2.—*Ten cases of resilient stricture, which were suitable for internal urethrotomy, but which were treated by electrolysis.* Of these five were still under treatment. One case was passing a good stream eight months afterwards. One recurred in a year. In one bronchitis stopped the treatment. One was under treatment for three months, and had not been seen since the end of that time. One is described as having a soft cicatrix at the end of three months, showing no tendency to contract. *Table* 3.—*Eight cases submitted to electrolysis with a view to complete cure. These cases were well suited for simple dilatation.* One was still under observation, and in the remaining seven, the average duration of treatment was 20·7 days.]

There are three varieties of cases to which this plan of treatment is applicable :—

1. The resilient stricture, for which cases the operation of internal urethrotomy is commonly employed.
2. Such strictures as are ordinarily treated by dilatation.
3. The so-called impermeable strictures, where no instrument can be passed into the bladder.

The treatment of the first two sets of cases is essentially the same, whilst the latter class requires a slightly different mode of handling. No anæsthetic is in any case required, as the process is almost absolutely painless, the patient rarely complaining of the procedure in any way, usually describing it as consisting of a slight tingling or pricking. If the current causes any pain its strength must be diminished.

It is most convenient to place the patient on his back and let him lie on a well-wetted pad about the size of the palm of one's hand or larger, which pad is connected with the positive pole of the battery. It is essential that the current from the positive pole should be distributed over a large surface and thus subdivided, so as to avoid its destructive action on the skin. Occasionally it is necessary during the course of the operation to change the place of this pad on account of the burning sensation of which the patient complains.

If the stricture has not been already carefully measured, by means of bougies *à boule*, or by any other method the surgeon prefers, this must be done before the exact line of treatment can be decided on. Where one stricture only exists, that alone will require treatment, and the case is simple; but where more than one is present the most anterior should be treated first, and on a

subsequent occasion the deeper strictures should be again carefully measured, as they may have in the meantime become somewhat enlarged in calibre. A bougie-electrode is selected which is about two sizes larger than the largest instrument which the stricture will admit; it is oiled and passed down, and allowed to rest by its own weight against the stricture. By means of the binding-screw at the top it is connected with the negative pole of the battery. The galvanometer is introduced somewhere into the circuit, *i.e.*, either between the bougie-electrode and the battery, or between the pad and the battery. It is preferable to place it in the latter situation, as it is less likely to be disturbed. One of its binding-screws, therefore, must be connected by a short length of wire to the positive pole of the battery, and the other by a similar piece of wire to the back pad. When all these details are completed, the battery is brought into action by lowering the zincs and carbons into the acid.

For the first few seconds it is very likely that the patient will scarcely feel the pricking which is manifest later on, as the resistance offered by the skin before it becomes thoroughly soaked is very considerable. Soon, however, the needle of the galvanometer and the patient's sensations clearly point out that the current is passing. If the current strength is more than 5 milliampères, or the patient complain of anything approaching to pain, a less number of cells should be at once resorted to. If the stricture that is being attacked is situated anywhere in the penile portion of the urethra, the surgeon will have no difficulty in determining whether the instrument is passing in the right direction; but if the stricture is situated more deeply, one finger in the rectum will readily indicate what is going on, should any difficulty be experienced. During the course of the sitting bubbles of gas can be seen and felt to pass up the urethra, and if the operation be performed in a bath the bubbling up of the gas forms a striking feature. There is no need to change the strength of the current unless the galvanometer or the patient's sensations demand it. After a period varying from a few minutes to half an hour, the bougie usually traverses the stricture. As soon as this takes place the current should be arrested and the bougie gently removed, no further operation being attempted for at least a week. It is better to wait a fortnight, or even three weeks.

If the instrument does not pass the stricture in the course of half an hour, it is better to withdraw it and wait for a future sitting; and if the urethra is irritable, a much shorter time is quite sufficient. As a matter of precaution it is perhaps better if the stricture is small to keep the patient in bed for twenty-four hours, but excepting in one case, and that the first one which I attempted, I have never seen the slightest rise of temperature follow this mode of procedure. Strictures which are of moderate

calibre may be treated by this plan whilst the patients carry on their ordinary occupations.

The day following the passage of the bougie-electrode the patient usually complains of a slight soreness in the urethra as if he had an attack of gonorrhœa, but this rarely lasts for more than forty-eight hours. After the lapse of ten days or a fortnight, the urethra should again be carefully examined, when it will usually be found to admit an instrument one or two sizes larger than the bougie-electrode which was employed on the previous occasion. Thus, if the stricture admits No. 4 before treatment, No. 6. bougie-electrode will probably be able to be passed, and a fortnight later No. 8 or 9 will pass without difficulty. If this be so, No. 10 bougie-electrode should be employed in the manner that has already been described, and its passage on this occasion will probably be only a matter of a few minutes. A further interval of ten days' rest will most likely enable No. 12 to pass. If the operator think that any stricture still remains, he can again repeat the process; but it is, I think, desirable to wait a month before deciding whether any further treatment is necessary, for by that time the urethra will give better indication whether any recontraction is likely to take place.

One thing may be confidently asserted, that whether the cure be a really permanent one or not, a stricture which is now generally submitted to internal urethrotomy can be rendered easily dilateable by bougies, and thus all the advantage of urethrotomy is attained without any of its risks, or the loss of time to the patient which such an operation entails.

But there is another class of strictures, viz., those which are permeable to urine but not to catheters, and to them electrolysis is also applicable, and will certainly yield a good result. The *modus operandi* differs in no respect from that which has already been described, except that the patient should be kept in bed, and that greater care should be employed lest any false passage be formed. Like the previous cases, when more than one stricture is present, the anterior one should be attacked first. Such cases, I am well aware, generally yield in the long run to careful catheterisation, but the patient may lie in bed six weeks before the catheter passes, whilst electrolysis will effect a passage with much greater rapidity and ease. A moderate sized bougie-electrode, say No. 6, should be passed down against the stricture and there allowed to rest for ten minutes or a quarter of an hour, after which nothing further should be attempted. A week later catguts and small catheters should be employed, when it is quite likely that the previously impermeable stricture will be found to have become permeable, and can then be easily dilated to No. 6 or 7, and the treatment proceeded with as in the previous cases.—*Practitioner, Sept.* 1886, *p.* 192.

67.—ON THE EARLY TREATMENT OF PROSTATIC RETENTION, AND ON URINARY ("CATHETER") FEVER.

By George Buckston Browne, M.R.C.S.Eng., London.

Catheterism, in such cases as we are now considering, may be followed by fever, which varies in intensity from an almost imperceptible illness to one which may speedily place the patient's life in serious danger, and ultimately even prove fatal. In a few cases, there is no fever at all; in some there is a feeling of chilliness, followed by slight but general *malaise;* while in others there is, or is not, definite rigor, the temperature soon running up to 104° or 105°, with a pulse of 100 or thereabouts, followed by a feeling of great heat, and then by sweating and recovery. In graver cases, the fever may be continued and the rigors repeated, the patient ultimately recovering, but being left for a long time weak and prostrate; and, in the gravest cases of all, the fever continues, perhaps without further rigor, the temperature remains about 103° or 104°, the pulse perhaps 120 to 130, the tongue becomes dry, brown, and narrow, and the patient gradually sinks into a comatose condition, and dies.

Now, the important question arises, What is the etiology of this remarkable and often serious fever, and how is it to be prevented, or, at least, mitigated? The answering of these questions is the object of the paper. Owing to my association with Sir Henry Thompson, my opportunities of observation for the last twelve years have been very numerous. I have known the fever follow the passage down the urethra of a large and sharp edged renal calculus; and, in fact, it may follow all kinds of urethral irritation, independently of urethral instrumentation. I shall, therefore, not apply to it the term used by some, namely, catheter fever, because catheters are only one of many sources of irritation.

Of course, septicæmia may follow a wound in the urethra, as it follows, occasionally, a solution of continuity in any part of the body. Some have thought the fever we are now considering due to septic invasion of the kidney by the introduction from without of septic matter by means of the instrument. Now, this I cannot allow. In the first place, the fever may follow after every antiseptic precaution has been taken; and, secondly, there are numbers of men about daily and active, whose bladders we know to be constantly full of foul and decomposing urine.

In connection with the causation of this fever, the following case is instructive.

A year ago, Dr. B., a well-known hospital medical officer, thin, anxious, nervous, and sensitive, consulted me about a very close stricture. He constantly went about his work with a No. 1 gum-catheter tied into his bladder, and, if he took it out, complete retention frequently ensued. On three occasions, I made gentle

dilatation with bougies larger than No. 1, and each time violent rigor and high fever followed. I found that one-third of a grain of morphine, subcutaneously injected half an hour before making dilatation, entirely prevented rigor; but, for obvious reasons, this mode of treatment was impracticable, and I proposed internal urethrotomy. I cautiously, accurately, but freely divided the stricture with Civiale's urethrotome, and, from that day to this, he has had no fever, although every fortnight he regularly passes bougies up to 13 Eng.

Now, such a case as this (and I could quote a dozen) effectually disposes of another theory as to the causation of this fever, namely, that it is due to absorption of urine by the urethral mucous membrane, from abrasion made by the catheter; for, although there was a free incision into the urethra, there was an entire absence of fever, which, previously, had always followed the most gentle and bloodless instrumentation. The absence of rigor and fever under the influence of morphia is also highly significant.

In my own mind, I am satisfied that this fever results from urethral shock communicated to the sensitive excretory apparatus of the kidney through the nervous system, and causing all degrees of suppression of urine, from the merely momentary up to the most complete and absolute. We all know that, anatomically, the genito-urinary organs are closely connected with the cerebro-spinal and sympathetic nervous systems, and therefore with all the organs of the body, and especially with the kidneys. Physiologically and clinically, we know that, when an urethral instrument is passed for the first time upon a man, it is occasionally followed by alarming symptoms; and not unfrequently, in the space of a few seconds, the patient may be writhing on the floor, in all the unsightliness of an epileptiform seizure. A much commoner example of the remarkably close connection between the genito-urinary organs and the general nervous system is the excitement produced in the former organs by a single erotic thought. Death from shock has immediately followed amputation of the penis; and I have known rigor, with complete suppression of urine, lasting for twenty-four hours, and verified by the use of a small catheter, follow the passage of a bougie rather larger than ought to have been passed through an urethral stricture. The nervous origin of the fever explains satisfactorily what we constantly observe in practice, that, the more sensitive and cultivated the nervous system of the patient, the more readily does he suffer from this fever; for example, the medical man and the artist suffer more than the labourer. I am also of opinion, as the result of much observation and practice, that the amount of fever following urethral interference is directly proportionate to the amount and character of the instrumentation inflicted; and it is a very practical point, and

all in favour of the theory I accept, that instrumentation, when made under the influence of morphine, is often made without fever in cases where fever is sure to follow if no drug be employed. In proportion to the amount of shock communicated to the kidney, the blood in the general circulation becomes more or less loaded with urinary elements; fever is produced; and, if the kidneys do not speedily recover themselves, it is easy to see that soon the patient may be in danger. In the firm belief that this explanation of the fever is the correct one, I do not term it catheter-fever, for the reason just given; nor urethral fever, because the kidney may suffer shock in other ways than through the urethra; but I prefer, as Sir Henry Thompson does, the name *urinary fever*.

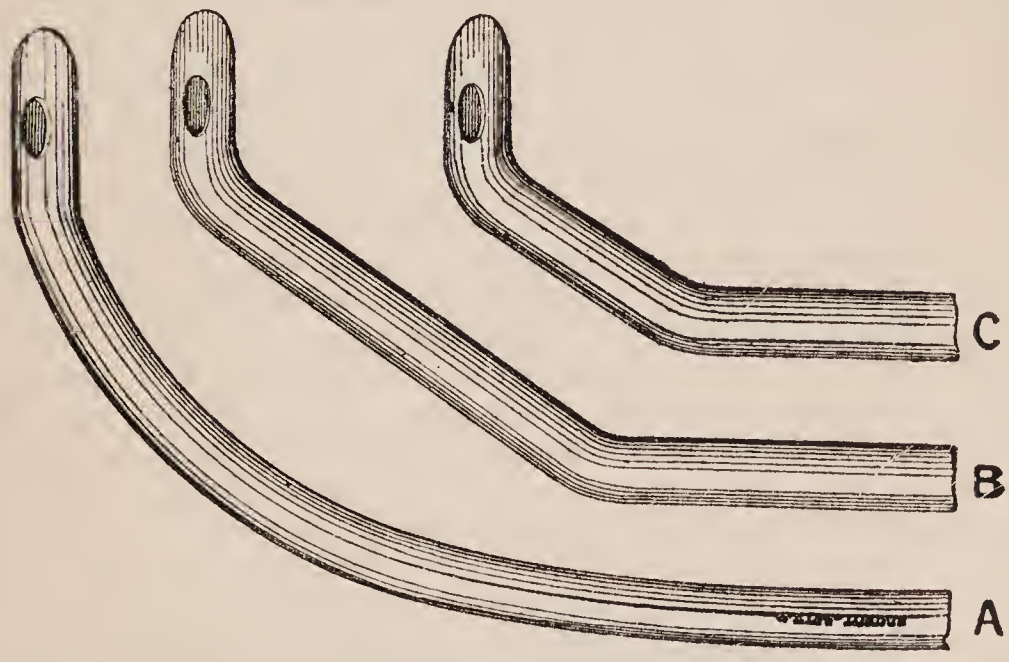
When there has been long standing obstruction to the natural outflow of urine, owing to prostatic enlargement, the kidney is particularly liable to certain changes which render it difficult for it to recover from the congestion consequent upon the shock from urethral catheterism; and, although the catheterism may have been vitally necessary for the relief of partial or complete retention, still it is the starting-point of serious, and perhaps fatal, illness; and it is difficult to make the patient and his friends understand that, so far from being the cause of the illness, it is precisely because catheterism was not sufficiently early resorted to, that the illness is so severe. There is good reason to believe—putting aside cases where a person endowed with a remarkably sensitive nervous system may die from pure shock—that no one ever dies from urinary fever, if, at the outset, the kidneys be perfectly healthy. Unfortunately, we have no means of ascertaining beforehand whether the kidneys are in a state to bear catheterism or not, although, undoubtedly, urine of a low specific gravity is an unfavourable sign; but we need not let this impede our practice, for, if a catheter be necessary on account of retention of urine, it must be used, otherwise the patient's fate is sealed; and if, through long-continued, but perhaps unobserved, disease, he succumb from urinary fever, it is very certain that, had he not been subjected to catheterism, he would have died also, and probably with much more suffering. The full acceptation of the nervous origin of urinary fever is of great help to us in practice. It obliges us, in the first place, to do all in our power to diminish urethral shock; and, when once the fever has come on, it makes plain to us that all our attention must be devoted to the relief of the embarrassed kidney. Our non-acceptation of the septic origin of urinary fever saves our patient from the prolonged instrumentation and disturbance of the bladder and urethra, which are necessarily caused by constant and free antiseptic irrigation; and we make no attempt to mould or straighten our patient's prostatic urethra by the introduction of dilating instruments—an old plan

of treatment, recently again brought forward.—*British Medical Journal, May* 8, 1886, *p.* 869.

68.—USE OF INSTRUMENTS IN PROSTATIC RETENTION.

By G. Buckston Browne, M.R.C.S.Eng.

The first object of treatment being to reduce the urethral shock to its minimum, it is necessary to pass the easiest kind of catheter, and in the most skilful and gentle way. I will, therefore, as briefly as possible, discuss the relief of prostatic retention by instruments. All instruments must be antiseptically clean, warm, and well oiled. They should, if possible, be soft ones, and, as a rule, the smaller they are, within certain limits, the better. The least trying of all to the urethra, is a No. 5 or 6 Eng. vulcanised india-rubber catheter (Jaques' patent); it is easy of introduction, and if it "go," well and good, but it will not always pass, and then no amount of skill will be of any use. If it will not pass, a small French *coudée* catheter may be employed. I show you a suitable catheter, and also one often supplied, which undoubtedly is a *coudée* catheter, just as a penny Pickwick is a cigar, but not the cigar a *connoisseur*



would care to smoke. Keep the beak upwards, and, as a rule, this catheter rides easily into the bladder; if it fail to pass, it will probably be due to the point catching in the prostatic sinus. In order to disengage the point of the instrument, gently withdraw it for about an inch or more, and rotate the catheter on its long axis, so that the beak points laterally to the right or left, instead of upwards as it did before. Now try to pass it into the bladder; if unsuccessful, repeat the movement, turning the point this time to the other side. Frequently, this manœuvre will prove successful.

If not, a *bicoudée* catheter should next be tried. I do not think that this form of catheter has ever been fully appreciated; it is one of the most useful instruments in certain cases of difficult prostatic catheterism. Probably, the catheter has failed to take its proper position, because such bad forms of it are sold as are represented in figures C. and B. Figure A represents a perfect *bicoudée* catheter; it second permanent bend is not abrupt. They are made to perfection by M. Bénas, of Paris. If still unsuccessful, the surgeon may try a very soft-ended olivary catheter; but this instrument is only rarely of use in difficult prostatic catheterism. Then, if necessary, a large *coudée* catheter may be tried (No. 12 Eng.); for, although large instruments give more pain than small ones, they will often, by reason of their size, avoid an awkward place, which will engage a smaller instrument. I would here mention, with praise, the silk web *coudée* catheters, made in London, and of somewhat recent introduction. They are soft and highly polished, and I have often succeeded with them when an ordinary *coudée* has failed. I think this is because they are soft enough to become practically *bicoudéed* in the urethra, which enables them to pass easily over the bar at the neck of the bladder. Then, the English gum catheter is not to be dispised; in skilful hands, it is more effectual than perhaps any other single kind of catheter, for it can be moulded in warm water into any shape, and afterwards "set," by dipping it into cold. A good plan is to keep one of these catheters permanently on a stylet which has been overcurved; when required for use, the stylet is removed, and the catheter keeps its curve so well in the urethra that it will often successfully surmount the obstacle at the neck of the bladder. Another plan of using this catheter in a difficult prostatic case is to introduce it on a stylet. When the catheter meets the obstruction at the neck of the bladder, it is held there with one hand, while the other withdraws the stylet for an inch or two: this movement causes the end of the catheter to rise and come forward, frequently with the happy result of entrance into the bladder. If this be not the case, silver catheters must be used, of various prostatic curves, with the patient either standing or lying. The introduction of the left forefinger into the bowel may often be of assistance, by pressing the point of the catheter forwards. After successful but very difficult catheterism, it may become a question whether the catheter should be tied in or not. This should always be avoided, unless the difficulty have been really great, and then only a a soft instrument should be retained. I am as satisfied that I have seen life saved by tying in a soft instrument, as I am that I have seen life lost by using a metal catheter. If a silver or metal instrument alone have relieved the retention, it may often successfully be replaced by a soft instrument, if the latter be moulded on a stylet to the exact shape of the former. With

patience, gentleness, and skill, the surgeon should always succeed in passing a catheter in a case of prostatic retention; but supposing that, from great irregularity of the part, or want of suitable instruments, or injury previously inflicted upon the urethra, he cannot pass an instrument, he should not delay, but should aspirate the bladder at once suprapubically. Afterwards, with rest and a thorough evacuation of the bowels, a catheter may often be easily passed through the urethra and into the bladder. Should retention recur and catheterism again fail, a second or even a third aspiration is allowable; but although the bladder has been safely aspirated many (ten or twelve) times in succession, fatal extravasation and abscess have been known to follow even a second aspiration, and it is therefore unwise to aspirate often. After a third aspiration has been necessary, and if still no catheter can be introduced, it will be good practice to puncture the bladder, suprapubically with trocar and cannula, leaving the cannula or a small catheter in the wound.—*British Medical Journal, May* 8, *p.* 870.

69.—ON PROSTATIC RETENTION AND ITS TREATMENT.

By G. Buckston Browne, M.R.C.S.Eng.

The diagnosis of prostatic retention does not concern us here; but in discussing its early treatment by catheter, it is conveniently considered under three heads.

1st. In cases where the prostrate has only recently enlarged, and where the partial, but habitual, retention of urine does not amount to more than two or three ounces after every natural act of micturition, with proper care and management, recovery should always take place. These patients become thoroughly accustomed to the catheter, and use that instrument daily, as a mere addition to their ordinary toilet. They live as long as their fellows, and often attain great age. I recently saw, with Dr. Morton, of Kilburn, a gentleman, aged 85, who had passed all his urine by catheter for twenty-five years.

2nd. Cases where the patient is able to void urine, but is obliged to do so with much frequency, and there is a large area of hypogastric dulness on percussion, often do not come under the surgeon's notice until there is complete retention; they are always grave, sometimes almost hopeless from the commencement of treatment.

3rd. There is a form of complete retention which may be termed the paroxysmal complete prostatic retention, in which the patient only occasionally requires catheterism, often going for long periods without the slightest need of the catheter.

1. In cases where the prostate has only recently enlarged, the first catheterism will often be made as an aid to diagnosis. Owing to certain symptoms, the surgeon desires to find out if the patient be able to empty his bladder by his natural efforts. If the patient

be ordinarily robust, the catheter may be passed in the consulting room, and afterwards the patient should go home, and sit in a warm room for the rest of the day; but, if he be nervous or in any way out of health, I would advise the surgeon to make an appointment with him at his own house, and ask to be received in his bedroom. Before the catheter is passed, the patient should be desired to pass all the urine he can by his own efforts. He should be left alone for this purpose. Afterwards, the patient stands with his back to the wall, and the surgeon, seated in front, passes a No. 5 vulcanised india-rubber, or a small French elbowed catheter; any urine drawn off will be urine which the patient could not pass himself. If only an ounce or so be found retained, the experiment had better be repeated next day; because, often from sheer nervousness, a patient may be unable to make his bladder act completely on the first occasion. I may here say that, most unfortunately, the use of cocaine as a lessener of urethral shock, during early catheterism, is impracticable; the drug renders the urethra insensitive where it comes into contact with it, but it cannot be introduced into the deep urethra without using a urethral instrument, so that nothing is gained by its use. After such catheterism as just described, the patient should have a hot bidet bath. If no urine be found behind, he may be allowed to go out the next day; but, if two, three, or more ounces are found, he should at once learn to pass a soft catheter, and, for a week or ten days, should not leave the house. If the quantity retained be considerable, *e.g.*, five or six ounces, and if the patient be feeble, he had better keep his bed at first. The catheter is usually required once a day for less than three ounces of retained urine, twice a day for three to six ounces, and three times daily for six or seven ounces; over this amount, the patient will not be comfortable without four or more catheterisms in the twenty-four hours.

2. In treating those coming under my second heading, there is usually little doubt that the bladder habitually retains a large amount of urine (say a pint, or more). Such cases should not be touched by catheter until they are comfortably settled in a warm room, where they can remain as many days or weeks as the surgeon may deem necessary. The urinary fever, which is almost certain to follow catheterism, will be much controlled if a little morphia be administered half an hour before the catheter is used. If by mouth, I prefer a small dose of Squire's solution of the bimeconate of morphine, or of nepenthe; but, in my own practice, I prefer a small dose of morphine, combined with atropine, injected hypodermically. If the bladder be very full of urine, it should not be emptied at the first catheterism. It is quite enough to draw off from sixteen to twenty ounces; otherwise, pain and cystitis are produced, both of which we wish particularly to avoid. Usually, four or five days should elapse before the bladder is completely

emptied. In all cases, after the commencement of regular catheterism, if there be constitutional irritation, advantage will follow the administration of small doses of an opiate, two or three times a day. Should rigor come on, spirits must not be given, but the patient should be warmly wrapped up, hot bottles put to his feet, and hot tea, or other simple drink given to encourage prespiration. If the fever run very high (105°), and the patient be fairly robust, frequent small doses of antimony wine are useful; if he be not very strong, the salicylate of soda may be given, and, when the fever is slight, frequent small doses of liquor ammoniæ citratis are excellent. Sometimes, as patients approach recovery, there is considerable diuresis, which may occasion much disturbance, at a time when they are not well able to bear it. Here, some one of the many preparations of opium will act as a charm, by checking the secretion of urine, while, at the same time, it promotes the action of the skin. I do not recommend belladonna, nor atropine, except at first combined with morphine hypodermically, to lessen the effects of shock. Counter-irritation, doubtless, exercises much influence over the production of urinary fever, as witness the remarkable immunity from fever often enjoyed by patients who are relieved by catheter from very painful retention of urine. The very hot bidet or hot hip-bath is a mild form of counter-irritation; hot mustard and linseed poultices over the loins, and even blisters, are other forms which sometimes may be employed with advantage. In order to enable the kidney to recover itself, those organs which are complementary to it in their action, notably the skin and the liver and intestines, must be kept active; the former is stimulated by the warmth of the bed or bedroom, and the latter should be made to act gently, daily, by a little simple laxative medicine (not saline), combined occasionally with small doses of blue pill. The diet should consist of bread, vegetables, soup, fish, game, and chicken, with little, if any, butcher's meat, and no milk or cheese. As a rule, spirits must be avoided, and as little wine given as the plaintiff's previous habits will allow. Above all, the patient must be able to obtain relief by the catheter, whenever the calls to pass urine are frequent, and the bladder evidently suffering from ineffectual efforts to void its contents. The amount of urine secreted in any given portion of the twenty-four hours, varies greatly from day to day, and the patient must not be dependent upon the periodical visits of his surgeon for instrumental relief, but should learn to pass a catheter for himself or have a skilful attendant always at hand. If no urine is passed naturally, the catheter must be used whenever the desire to micturate comes on. Patients often try to postpone the use of the catheter as long as possible, and look upon the instrument as a source of irritation; the reverse is exactly true, and it is better to pass the catheter even oftener than is really necessary, than too seldom.

3. After complete retention of urine, all the care just insisted upon is specially important. After relief by the catheter, the patient should go to bed. If the amount of retained urine be great, the bladder must not be emptied suddenly, as such a proceeding has been followed by fatal syncope. If the amount be not great, *e.g.*, under a pint and a half, the patient should be watched, and, if he be able, in time, to pass urine naturally, the catheter should be employed after he has done all he can by his own efforts, to see if he really can empty his bladder. In the few cases where the patient regains his vesical power completely, he should keep his bed twenty-four hours, and his house for two or three days, and take a little calomel or blue-pill, with some mild laxative. But if, as is usual, the regular use of the catheter is required, the patient should be kept in bed until the urinary fever, which is usually to be expected within the first five or six days, has passed away. During the first few days of catheterism, hemorrhage into the bladder not unfrequently occurs; this need not excite alarm, provided the necessary instrumentation is practised with gentleness and skill, and that the patient is kept absolutely at rest. In such cases, morphia is often very useful; astringents by mouth are really useless, and injections into the bladder are to be deprecated as long as bleeding lasts.

Thus, the main points to be observed in the early treatment of prostatic retention of urine, are:

First—The reduction of the urethral shock to its minimum;

Second—The care necessary to enable the kidney to maintain, or regain, its equilibrium, often rudely disturbed by reflex irritation, conveyed from the urethra.—*British Medical Journal, May* 8, 1886, *p.* 871.

70.—ON THE SYMPTOMS AND PHYSICAL SIGNS OF STONE IN THE BLADDER.

By William Cadge, F.R.C.S., Hunterian Professor Royal College of Surgeons; Senior Surgeon to the Norwich Hospital.

Little need be said concerning the symptoms of stone; they are generally clear and palpable enough, but sometimes they are conspicuous by their absence, and many a surgeon, led astray by this absence, has lost credit in consequence.

When the stone is small, and falls readily about the bladder, it seldom fails to cause some degree of pain and irritation; but if the patient do not seek advice, and time go on, and the stone become a large one, the symptoms may become obscure, and it is the common observation of all surgeons that, occasionally, the largest stones produce the least trouble. Here, for instance, is a lithic stone, weighing nearly nine ounces, which was removed after death. The old man had little or no pain; he never, I believe,

consulted a surgeon, and died from another ailment. I found the bladder perfectly healthy, and lying loosely round the stone, which seldom moved.

Another cause of obscurity is the fixed position of the stone. I know nothing of what is called adhesion of the stone to the bladder, nor have I ever met with an instance in which it passed occasionally in and out of a cyst or sac; but it is not very unusual to meet with cases in which the stone is held immovable by irregular contraction of the muscular columns. This large rough mulberry calculus was held in the upper fundus of the bladder; the sound detected it there, and, at the operation for its removal, I was obliged to depress the handles of the forceps, and push the blades up behind the pubes. This gentleman had carried the stone for many years, during which he experienced but very slight symptoms; he travelled much, both in England and abroad; he occasionally called on an eminent surgeon as he passed through London; but so little did he suffer, that, for a long time, there semed no excuse for sounding. Sometimes a stone case is mistaken for one of hemorrhoids; this is apt to be the case in old men with enlarged prostate. The piles probably exist, and the associated forcing action of the bladder and rectum will aggravate the piles, and induce the belief that they alone cause all the trouble. Hæmaturia is, of course, an usual accompaniment of stone; it is generally small in amount, and is caused by movement in exercise; but it is sometimes in large quantity, and is attended by so little irritation of the bladder, that no suspicion of stone is entertained.

Many years ago, I removed a stone, weighing two ounces, from a man who had twice been in hospitals under the physicians. The stone broke in the forceps, and large quantities of black material, like cinders, came away mixed with scales of calculous matter. It was found to be composed of alternate layers of dried blood and stone, with a nucleus of oxalate of lime. This man was cut a second time, eight years after the first, and a mixed phosphatic and lithic stone removed, and I believe he was operated on a third time by Mr. Teevan in London, where he came to reside.

Sounding for stone is by no means always a simple or easy proceeding, judging by the large number of cases in which the stone is undetected by the sound, and of those instances, also, in which it was said to exist, but in which it was really absent. Nor can it be said that this uncertainty is always due to inexperience; for I believe, and I could support this opinion by a good deal of strong evidence, that there is no surgeon, however great his experience and his manipulative dexterity may be, who has not now and again left a stone undetected in the bladder. I quite readily admit the failure in my own case, and admit also the feeling of chagrin and self-reproach which I have felt on being told of my failure.

The difficulty sometimes experienced in introducing a sound may

be due to spasm; it may be the first time that any instrument has entered the urethra, and we all know how often a hitch is found at a first attempt, when no organic obstruction really exists. By far the most frequent cause of difficulty that I have noticed, however, is enlarged prostate; the altered course of the prostatic urethra, or the bar caused by hypertrophy of the median lobe, may make it especially awkward for the short sharp curve of a sound to find its way; but there is one cause of failure to find a stone which I have specially noticed, and by which even experienced surgeons have been misled. It is by sounding the deep prostatic sinus, and never reaching the bladder; the latter is at a great distance; the sound looks as if it were well in, and can be moved more or less from side to side; the bladder is assumed to be contracted; no stone is felt, and an erroneous opinion is given. If the suspicion do not cross the surgeon's mind that he has not reached the bladder, he will rest contented and mistaken; if it do, he will overcome the difficulty by well raising the patient's hips, well depressing the handle of the sound, and, by a semi-rotatory and firm forward movement, making it glide over the obstacle; if it will not do so, a sound, with a less abrupt curve, will probably pass. In this, and in all cases, the use of an anæsthetic will greatly facilitate the proceeding; but in these prostatic cases, and especially in children it is almost essential. I do not profess to describe the usual mode of sounding, but I may venture to remind my younger hearers that the object of sounding is much more than simply to ascertain the presence or absence of a stone; we not only do that, but we also ascertain the probable size and nature of it, and whether it is movable or fixed; the condition of the bladder as to irritability, capacity, softness or hardness, whether it is smooth or rugous; also, we note the size and prominence of the prostate. All this information the practised hand will endeavour to elicit, in order to select by what operation, if any, the calculus is to be removed. It is good that some, but not too much, urine should be present—perhaps the secretion of an hour or two. Children will not unfrequently, so much do they dread the pain in micturition, accustom the bladder to retain a large quantity; in which case, the coats of the bladder feel hard and rigid, the bony wall of the pelvis is immediately contiguous, and, between these two conditions, the sensation, but not the sound, of a foreign body is produced; while the stone itself, if one be present, is not easy to find. Very often, as the chloroform takes effect, or as the sound is passing, the bladder contracts, and a large quantity of urine is expelled with straining. Phimosis and other ailments will often give rise to vivid symptoms of stone in young children. Some months ago, I was requested to go to a distance, prepared to do lithotomy for a child three years old. When I stated to my medical friend that I had only once in my life met with stone in a child of well-to-do parents, he replied, that

he had sounded, and felt no doubt of the presence of a stone of some size; however, no stone could we then detect, but simply a phimosis; this was remedied, the symptoms abated, and I have heard no more of it.

Sounding, as every one knows, may be followed by serious and even fatal consequences. Retention, prostatitis, orchitis, cystitis, and nephritis—any of these may ensue, and we are warned, and properly warned, against sounding patients who have to travel immediately after it. It is, however, almost impossible to adhere to this rule; patients come up from a distance, expect to be told what is amiss, and return to their homes; and, without an examination, it may be impossible to diagnose or treat their malady. A few hours' rest should be insisted on, with simple food and a warm drink, and, where retention seems likely, an opium pill and hot fomentations. Two fatal cases from sounding have occurred to me: one from nephritis when all proper precautions were taken, just as it may occur after a simple lithotrity or after the first use of the catheter for atonic retention; the other, a few months ago, from continued prostatic retention. The sounding was easy, a small stone was detected, the patient never left his room, but there followed the necessity for constant use of the catheter, which was attended sometimes with difficulty, and bleeding, and death in about a fortnight.—*British Medical Journal, June* 19, 1886, *p.* 1149.

71.—ON SUPRAPUBIC LITHOTOMY.

By William Cadge, F.R.C.S., &c. Norwich.

[Mr. Cadge in his lecture on suprapubic lithotomy, refers in detail to the value of rectal distension, and says that his own experiments rather tend to confirm Mr. Barwell's observation, that this part of Petersen's method has probably little to do with the raising of the prevesical peritoneal fold; still he would advocate the use of it as greatly facilitating the exploration of the more remote parts of the bladder cavity. As to the method of operating, Mr. Cadge says that he regards that adopted by Sir Henry Thompson as the best, namely, to use the knife as little as possible, and the finger nail or some blunt instrument as much as possible, as the bladder is approached.]

Advantages of the Suprapubic Operation.—These are considerable. 1. It is easier of performance than perineal lithotomy, or, in many cases, than litholopaxy; and this is a point of no small importance, especially to those who are not frequently called on to operate for stone. The high operation, as formerly practised, was by no means free from difficulties, due chiefly to the greater proximity of the peritoneum, to the sinking of the bladder, when opened, into the depths of the pelvis, and to the consequent inability

to reach it. Now, with the bladder brought well into the abdominal cavity, and retained there by the rectal bag, it needs only common skill and prudence to operate. In this, however, as in most other operations, much facility will be acquired by previously practising it on the dead body. 2. By it, stones of the greatest magnitude may be removed. Dr. Cayley, in India, Dr. Morison, of Hartlepool, and Mr. Rivington, have removed stones weighing 25 and 23 ounces. These could never have been extracted through the perineum, and it is not to be supposed that their removal by the high operation was easy. Mr. Rivington found it necessary to break up the stone with a chisel and mallet, and withdraw it piecemeal, and M. Guyon mentions a case in which he had to do the same. Both these cases, however, recovered from the operation. Dr. Morison found it impossible to extract the stone with any lithotomy-forceps, but managed cleverly to deliver it—if I may use the term—with a pair of small midwifery-forceps. 3. Infiltration of urine, it is said, should not occur after the high operation. Anatomically considered, the loose cellulo-adipose tissue covering the bladder would, I think, induce one to fear the permeation of it with urine and blood, and consequent mischief; and it must be admitted that some deaths from this cause have already been reported, while, by the old method of operating, fatal infiltration was by no means uncommon. 4. Freedom from troublesome bleeding ought to be, and probably will be, found to be greater than after perineal lithotomy. There are no arteries lying in the knife's course, but there are some considerable veins coursing over the bladder, and the bladder-wall itself is vascular; notably, there are two veins which I have repeatedly observed (best in thin people) running parallel with each other from the apex down the front of the bladder, to join the plexus around the prostate; the line of incision would usually run between, but close to them, and they might, without care, be easily wounded. In several cases recently reported, sharp bleeding has occurred, checked in one case by a timely ligature, and in another by a firm plug and compress; so that on this point, as on others, we must suspend judgment for the present. 5. The suprapubic is certainly less liable than the lateral operation to various subsequent drawbacks, such as fistula, wound of the rectum, impotence, &c. 6. There should be but little risk of leaving stones or fragments of stone undetected. In certain cases of lateral lithotomy, where the prostate is enlarged, and the bladder not within reach of the finger, this is a very real risk; but, in the *sectio alta*, the finger will almost always be able to explore every part of the cavity; and, as less force is required to extract the stone, so there will be less liability to break it.

The risks and disadvantages of the operation are, happily, not great. The chief one is the possible opening of the peritoneal

cavity, leading to peritonitis from urinary extravasation, or to hernial protrusion of the intestines. With the present plan of operating, this danger is remote, but it has occurred. It is not easier to recognise the outside of the serous membrane in this operation, than it is in ovariotomy, or in dividing the coverings of a hernia; should it be opened, it may be well to consider what is the best course to adopt. M. Polaillon, in one case, closed the wound, and postponed the further steps of the operation. Dr. Tremaine, of Buffalo, having removed the stone and partially closed the wound, was called to the patient in less than half an hour; and found that, under the stress of vomiting, a quantity of small intestine had escaped through the wound. He at once clipped the sutures, returned the bowel, and stitched the anterior wall of the bladder to the abdominal wound, so as effectually to close the aperture in the peritoneum, and the patient made a good recovery. Some surgeons contend that the contact with, or entrance of, healthy acid urine into the peritoneal cavity, would not necessarily produce peritonitis; but I know of no evidence to justify this opinion, and, moreover, the urine in stone cases is seldom quite healthy. The safest course, however disappointing, would probably be, if the accident were immediately discovered, to close the wound, and postpone further proceedings for a short time. Rupture of the bladder from over-distension is not likely to occur, if the injection of fluid be arrested as soon as real resistance is felt. Violent straining of the bladder and rectum, with extreme rigidity of the abdominal muscles, are apt to come on, but they will subside in a short time. In the case, lately, of a girl whose bladder contained a stone, this straining, I found, came on before three ounces were injected, and the water was expelled with great force when the catheter slipped out. The quantity of fluid used varies with the retaining power of the bladder; in children, probably not more than a few ounces; and in old men, with atonic bladder, twelve to fifteen ounces, or more, may be introduced. Similarly, injury to the coats of the rectum will not happen in future, if the quantity of water introduced into the bag be limited to twelve or fourteen ounces. Petersen and Guyon speak of larger quantities; but a larger quantity is neither necessary nor safe. The only instance of this accident that I know of occurred in my own practice, in the case of an old man, into whose rectum I injected, slowly and easily, nearly eighteen ounces; he died of kidney-disease and suppression of urine five days after the operation. All the surroundings of the bladder were healthy; but there was a rupture of the mucous membrane and of the circular muscular fibres of the rectum, to the extent of an inch, near the bladder. The report of published cases would seem to show that recovery is rather slower after suprapubic than after lateral lithotomy; the urine resumes its natural route more tardily, and the operation-

wound takes a long time to heal; and this, not only after the removal of very large stones, but even when they have been small. This, however, will not deserve much consideration, if it can be shown that the cure is more certain and more complete than after other methods. It must be admitted that the suprapubic wound is unfavourably placed for thorough drainage of the bladder; it is at the least, instead of the most, depending part, as the patient rests on his back; and to obviate this difficulty, it is well to place him on his side. Trendelenburg tried the prone position; but this evidently could not be long maintained, and did not answer.

Application.—The cases for which, and the limits within which, the suprapubic operation is applicable, cannot at present be confidently stated. All are agreed that it is to be preferred to other methods for very large stones; those, namely, which exceed the size of a hen's egg; but how, it may be asked, should a stone, which is just too large to be amenable to lithotrity, be dealt with —by perineal or by suprapubic lithotomy? Should the advantages claimed for the latter be made good (and there are strong grounds for the expectation), then the lateral method, however reluctant we may be to relinquish it, must yield the field to its newer rival.

It cannot be denied that lateral lithotomy has, in most hands, for stones weighing over 2 ounces, proved fatal in the proportion of 40 to 45 per cent. The record of the Norwich Hospital gives, for stones of 2 to 3 ounces, 54 cases with 20 deaths; of 3 to 4 ounces, 14 cases and 9 deaths; of 4 to 5 ounces, 9 cases with 3 deaths; of 5 to 6 ounces, 3 cases with 2 deaths; of 6 to 8 ounces, 2 cases with 1 death; total, 86 cases (males) of stones over 2 ounces with 39 deaths, being 1 in 2·20, or about 45 per cent. The death-roll of four of the large London Hospitals for similar cases is, I believe, somewhat larger than this; whilst the mortality of the suprapubic operation for stones weighing over two ounces is, according to Dr. Dulles, somewhat less; namely, 62 cases with 22 deaths, or 1 in 2·8, being 35½ per cent. It would not be safe to put too much trust in these statistics; the conditions are not equal. The Norwich tables are fairly taken; they include all the cases, successful and unsuccessful alike, which have occurred in one institution, and it may be conceded that the large majority of them were done by fairly competent hands; but the suprapubic cases were gathered from all sources, and were done by many hands, competent and incompetent. They include those only which the various surgeons choose to publish, and we know how reluctant many are to put forward unsuccessful cases. This inference would, of course, tend to reduce the success of the suprapubic operation; on the other hand, we may confidently expect that, with our improved methods, with our increased knowledge of abdominal surgery, and with the partial use of antiseptic measures, the results

obtained will be far better in the future than they have been in the past.

There is a class of cases for which the high operation will probably become more and more applicable; namely, the combination of stone with considerable enlargement of the prostate gland. Looking back at my own experience, I perceive that these cases constitute a very large proportion of the whole, and they furnish also a large proportion of the unsuccessful, incomplete, and fatal cases. They are more difficult to cope with than any other class; the bladder often cannot be reached; stones, or fragments of stone, are apt to be left behind; hemorrhage is frequently serious, and is difficu t to deal with; in short, a full-sized stone associated with a large prostate constitutes, as I have before said, the maximum of difficulty in lateral lithotomy. Those surgeons who, like Mr. Reginald Harrison, believe that it is good practice to try, not only to remove the stone, but also to cut away portions of the prostate gland, or to make incisions through obstructing parts of it, will still prefer the perineal route. For my part, with all respect for these views, I am disposed to treat the enlarged prostate with forbearance and respect, and to leave it absolutely untouched. The pain, cystitis, and misery which these patients endure, are due, not so much to the prostate, as to the added trouble of the stone; and, in my experience, the entire removal of the stone will, in almost all cases, place the patient in comparative comfort. The high operation in these cases would present no unusual difficulties; the bladder is usually large and dilatable, and the stone would be within easy reach. An awkwardly enlarged prostate not only impedes the lithotomist; it equally frustrates the lithotritist, and renders his efforts unsatisfactory, as I shall presently show; and so, should the high operation have anything like the success which is predicted for it, not only will it supplant the lateral operation in such cases, but I can conceive that it will sometimes take the place of lithotrity also.

In all cases, the stone is much more within reach by the high operation than by any other; therefore, if the stone be encysted, it will probably offer some decided advantages. The distance between the surface of the perineum and the entrance to the bladder is always considerable: but, in many cases of encysted stone, the distance is increased by reason of hypertrophy of the prostate, and so the entrance to the enclosing cyst can seldom be got at with precision or safety, so as to extricate the stone; but, in the high operation, this would probably be more practicable.

In children (boys), the suprapubic operation has hitherto found its best success. The abdominal position of the bladder, the higher position of the anterior fold of the peritoneum, and the slight liability of children to urinary infiltration, are strong inducements to its adoption. On the other hand, lateral lithotomy

is also very successful; still it is not always an operation free from difficulty, and occasionally it fails altogether, even in experienced hands. When the stone is of any considerable size, the high operation is preferable to the lateral; and, when the stone is quite small, lithotrity, even in young children, has much to recommend it; but, in the average run of cases of stone in the young, results alone can decide which method is the safer.—*British Medical Journal, July* 3, 1886, *p.* 1.

72.—ON THE RECURRENCE OF STONE IN THE BLADDER AFTER LITHOTRITY.

By William Cadge, F.R.C.S., &c., Norwich.

Although the immediate and direct mortality of lithotrity is small, the recurrence of stone is lamentably frequent. In my own list of 133 cases, there were eighteen in which recurrence, one or more times, took place, being about 1 in 7. Sir. H. Thompson, with a much larger number of cases, gives about the same proportion. I am disposed to infer, however, that recurrence is more frequent even than this, because it is not likely that all who get relapse apply to the same surgeon again. Living, as I do, in a local centre, and drawing cases chiefly from a limited area, I am probably more able to trace, and more called on to treat, those who suffer a second or third time, than he who lives in the metropolis, and draws his cases from great distances. Patients may, and frequently do, apply to the same operator once or twice; but, after a time, they either apply to their own surgeon, or they decline further treatment; and too often their subsequent history is one of painful endurance of chronic bladder-disease and gradual exhaustion. If, moreover, there be added to the list those numerous cases of phosphatic deposit or concretions so frequently noticed after lithotrity, the relapses would, I believe, reach to nearly 20 per cent. This seems a heavy indictment to bring against lithotrity, but I am afraid there is no gainsaying it; and, if so, it would be wrong to pass it over, or make light of it. Many of these relapses might be prevented if the patients would observe directions, and persevere with treatment. It certainly is so with the unenlightened and uncomplaining hospital patient. Feeling himself well, or what he considers well, he goes to his work, and neglects the use of the catheter and other means; and, instead of returning in a month or two to have his cure certified, or a minute remaining fragment removed, he toils away as long as he can, and returns, perhaps in a year or two, with a fresh uric acid stone, or with chronic cystitis, and a phosphatic one. The educated, sensitive, private patient, on the other hand, will watch his symptoms narrowly, and return if the slightest indication of the old trouble should reappear. It is this difference which makes

lithotrity in hospital practice sometimes disappointing and unsuccessful.

This frequent recurrence must be due either (1) to the descent of a fresh stone from the kidneys, or (2) to a fragment of stone having been left at the first operation. As to the descent of a fresh stone: there can, of course, be no doubt as to the occasional occurrence of this cause, just as we see it occur after lithotomy. The bladder being entirely cleared of stone, there will be the same liability to the descent of a fresh renal calculus after one operation as after the other. What, then let me ask, is the fact as to lithotomy? I have already shown that there were only 21 cases out of more than 1,000 of lithotomy at the Norwich Hospital, in which recurrence was clearly traced to perfectly fresh formations coming like the first, from the kidney, or about 1 in 50; whereas, in Sir H. Thompson's list of about 600 persons treated by lithotrity, he mentions 61 cases in which he operated twice, 9 three times, 3 four times, and 2 five times; 75 in all, or about 1 in 8. The inference from these data seems to me to be inevitable, that relapse of stone after lithotrity is chiefly due to other causes than the descent of a fresh renal stone. To my thinking, the majority of recurrences is caused by the great difficulty in insuring the complete removal of all the *débris;* I have already referred to this in old persons, with enlarged prostate and feeble atonic bladder, and it is this class of patients who are especially liable to relapse. I have traced this in my own cases, and, I may also add, in cases of other and better lithotritists than myself, too often to have any doubt in my mind.

It is frequently said, and it is quite true, that lithotrity is often followed by a tendency to phosphatic deposit in the bladder, and this tendency constitutes one of the chief objections to the operation. Thus, Sir Henry Thompson says, "many who submit to lithotrity, become afterwards the subjects of chronic cystitis and phosphatic deposit, sometimes to a distressing extent" (Med.-Chir. Trans., vol. lxi, p. 175). Dr. Freyer also says, "In prostatic enlargement, the disease (stone) frequently recurs, owing to the fact that the bladder is never completely emptied of urine during micturition" (Lancet, March 1885). Why, I would ask, should this special tendency to phosphatic deposit ensue after lithotrity? Not, I think, as Dr. Freyer would have us believe, because of vesical incompetence and residual urine.

It is admitted that, in ordinary cases of prostatic hypertrophy, with atony and "catarrh" of the bladder, when no stone has ever existed, there is little or no proneness to phosphatic deposit. However fœtid, alkaline, and loaded with mucus the urine may be, no phosphatic deposit will take place in the bladder, except on some pre-existing nucleus. In such a bladder, we know how soon a catheter becomes encrusted; and similarly, if a clot of blood, or

any foreign body, or even an abraded surface or a new growth exist, phosphatic deposit will soon take place. Without some kind of nucleus, no deposit will occur. The mucous membrane with its epithelial covering has probably some inherent vital power, which seems to guard it against deposit of calculous matter; remove the epithelial covering, and deposit may occur at once on the rough surface. After lithotomy, how often do we see this phosphatic deposit along the tract of the wound, but it is not found on the mucous membrane, unless some ulceration or abrasion has taken place.

I think I am justified, therefore, in saying, that when phosphatic deposit (call it concretion or call it stone) follows lithotrity, it is, in the large majority of cases, engrafted by aggregation on a fragment which, notwithstanding all the skill and care taken, has been overlooked at the first operation. This consideration should make us pause before breaking up a stone in an atonic bladder; I have often felt some misgiving in doing it. With the aspirator and evacuating catheter, we may hope to succeed in clearing out all the *débris* from these bad bladders better than we could by the old method; but even with this improvement, as Bigelow says, "we fail to discover a last fragment in some bladders even by repeated washing."

On the other hand, what better alternative is open to the surgeon? Lateral lithotomy is a harsh proceeding, and more immediately perilous to life; and, moreover, it is not itself wholly free from the danger of leaving a portion of a broken stone behind. Suprapubic lithotomy, should it prove to be, in its modern form, more successful than it formerly was, may come to supplant not only perineal lithotomy in this class of cases, but lithotrity also.—*British Med. Journal, July* 3, 1886, *p.* 5.

73.—ON THE RADICAL CURE OF HYDROCELE BY ANTISEPTIC INCISION.

By William T. Bull, M.D., Surgeon to the New York Hospital.

[We publish the following excerpt from Dr. Bull's paper, in order to draw attention to a method of treatment little adopted in this country. Dr. Bull has operated on fourteen cases in all, one of which may be left out of consideration since the cure of a large reducible hernia was at the same time attempted, and the patient died of general peritonitis. Of the thirteen remaining cases one died of corrosive sublimate poisoning, while twelve made complete recoveries. Dr. Bull says that at present three methods of cure are prominently before the profession—the injection of iodine, the antiseptic incision and suture of the tunica vaginalis to the scrotal skin (with drainage) proposed by Volkmann, and the more recent method of the injection of carbolic acid. Of the twelve successful cases, ten were of the tunica vaginalis, and two were of

the cord. Some interesting figures are given showing the frequency of recurrence after the simpler method by iodine injection.]

In ten cases Volkmann's operation was done; in two (the cysts of the cord and epididymis) the entire parietal layer of the tunica vaginalis was excised. Bichloride of mercury of the strength of 1 to 5,000 was used in moderation to irrigate the wounds, and extreme care taken to tie all bleeding points. The incisions were long enough to reach from the top of the sac to the bottom of the scrotum. The tunica vaginalis was united by a continuous catgut suture to the skin, and two or three deeper sutures were applied to hold the two halves of the sac in contact. A further effort was made in this direction by the application of the dressing in such a way as to *hold* the serous surfaces together. Bone tubes were used in three cases, rubber drains in nine. And here I may say that the latter were shown to be preferable. The bone tubes softened rapidly, but were not absorbed at all, and did not adapt themselves to the sinuosities of the wound. The dressing was uniformly of peat-bags (with bichloride) and bichloride gauze, with occasionally a strip of iodoform gauze over the line of suture, and an outer layer of absorbent cotton. There was no instance of excoriation or marked erythema of the skin. The penis protruded through the middle of the dressing, which was applied snugly with crinoline bandages. One or two patients had to be catheterized for twenty-four or forty-eight hours; but this was the only discomfort experienced. The career of the wounds was in all cases aseptic, and without fever. A temperature of 100·6° on the evening of the second to third day, without any acceleration of the pulse, was the greatest constitutional disturbance. With little variation, the first dressing remained in place till the seventh day. On its removal the tubes were withdrawn, and a lighter dressing of iodoform or boric-acid ointment and plain absorbent cotton was applied supported by a suspensory bandage. This was changed as often as it became soiled. The patients were allowed to move about a day or two later, but were not, with one or two exceptions, discharged till the sinuses were healed. As a rule, primary union was found on removing the first dressing. In six cases this was *complete* except where the drainage-tube emerged; in five, besides the "drain sinus," there was a strip of granulations along a portion of the line of suture, forming a quite superficial ulcer, which scabbed over rapidly. In one case primary union was secured, but an accumulation of pus (without fever) made it necessary to break down the adhesion, and the abscess required two months to heal. The sinuses left after removal of the drain healed without special attention. There was no instance of orchitis, or epididymitis, or inguinal adenitis, and the induration and thickening along the cord, which have been noted by others, disappeared by the time the sinus closed, or soon after.

As regards the *time* occupied by the treatment, I find that the shortest period of confinement to bed was seven days, the longest three weeks; the average stay in bed in all twelve cases was ten days. The shortest stay in hospital was ten days, the longest sixty days, the average twenty-seven days. Two cases were much slower in healing than the rest—one from the occurrence of the abscess just referred to, the other from unexplained causes. I think with proper care the ordinary case could be expected to get through in three weeks. I have had the opportunity of examining five of these patients one year after the operation, and they remain cured. Two have been seen six months, two others four months after operation, and are free from recurrence. Of the remaining three I have no information. I may state further that all were operated upon under ether except one. In this case cocaine was used, with the effect of rendering the operation absolutely painless.

The result of the treatment of these thirteen patients may be briefly stated as follows: One has died from mercurial poisoning. Twelve have recovered—ten after incision with suture, two after excision of the sac. The wounds, except in one case, have healed without pain or constitutional disturbance, and on an average in twenty-seven days, ten of which were spent in bed. Nine out of twelve patients are known to have had no recurrence at a period of from four to twelve months after the operation.

This list of cases adds one to the two deaths previously reported from this operation. A writer in the Medical News of May 3, 1884, collected from various sources 330 cases, of which two proved fatal from septicæmia or pyæmia. Bramann, from v. Bergmann's clinic, has reported twenty cases without any deaths. This would make 363 cases with three deaths—a mortality percentage of ·82. As to recurrence, I have no further information than that given of the 330 cases above referred to, where in five, or 1·5, it was noted.

The technique of the operation needs but slight mention. The incision should reach from the top of the sac to the bottom of the scrotum, and I prefer to place its lower end behind the testicle in order that the drainage-tube may be out of the way. The tunica is best removed by stretching it on the fingers and cutting through and pushing back the loose connective tissue with blunt scissors. It is much easier than the extirpation of a hernial sac where the presence of a truss has made the layers adherent. The membrane is removed close up to the epididymis and testicle. It is important to be very painstaking with the ligatures, and to have the drain long enough to pass beyond the testicle. In other respects one proceeds as in Volkmann's operation, but the suturing of the wound is simpler, as the tunica is absent.

The small percentage of failures after the antiseptic incision shows it to be, in my opinion, incontestably the *surest* way of

curing any form of hydrocele; and, if we add to the operation the extirpation of the tunica vaginalis, the method would be absolutely free from any recurrence. But it is certainly not without risk. Even with its small percentage of deaths—·82 per cent.—it makes a wound of considerable extent, which exposes the patient to all the accidents of wound-healing; it necessitates, if one acts with due caution, longer confinement to bed, and demands rigorous attention to, and every facility for, antiseptic treatment. In view of these considerations, I shall be disposed in the future to reserve the operation for cases in which the injection method has failed, or to perform it only upon patients who, with knowledge of its chances, prefer to take them. As to the relative merits of the carbolic-acid and iodine injections I have no opinion to express based on personal experience, but, from the experience of Weir, Keyes, and others, I should feel warranted in adopting the carbolic-acid, and in sticking to it till it is proved less satisfactory than it seems to be at present. But I believe that the possibility of failure or of an *early recurrence* should never be left out of consideration in recommending the injection of either agent, and that we should be prepared with every antiseptic precaution to perform successfully the only truly radical operation—that of extirpation of the parietal tunica vaginalis.—*New York Medical Journal, March* 13, 1886, *p.* 294.

AFFECTIONS OF THE SKIN, ETC.

74.—ON REST IN THE TREATMENT OF SCROFULOUS NECK.

By Fredk. Treves, F.R.C.S., Surgeon to the London Hospital.

The treatment of inflamed and damaged structures by rest can claim an antiquity that it shares only with the earliest records of surgical science. Viewing the matter from a liberal standpoint, it may be said that the familiar procedures directed against inflammation and disturbance are little other than ingenious and manifold applications of this rudimentary principle of treatment. It is strange that some of the commoner affections of the neck should have been considered exempt from such elementary influences where the art of their healing is concerned. It is needless to point out that scrofulous gland swellings in the neck, together with scrofulous abscesses and the sinuses that result therefrom are, as a rule, very chronic in their course, and very obstinate in their relation to treatment. There is little in the anatomy of the neck to account for this. The part is vascular; it is easy of access; it is not dependent. The arrangement of the cervical fascia is certainly obnoxious to the easy progress of an inflammation, but in many of the most indolent cases this fascia is in no direct manner concerned. There is this, however, to be noted: that the neck is a part of the body that is in almost

constant movement, and if rest is of real import in the treatment of inflamed tissues, then there can be few parts of the body where it is more clearly demanded than it is in this place. If in the axilla or the groin there be a glandular swelling or a chronic abscess or a lingering sinus, the first injunction to the patient is an injunction to rest. Few would undertake the care of such cases if the patient persisted in continued movement of the limb. Yet there is this anomaly—that when like disorders are met with in the neck the need of rest is overlooked, and it may be possible to see an individual with a sinus about the elbow treated by splints, and a like sinus below the jaw treated without restraint of any kind. It is difficult to understand how an inflamed gland situated beneath the sterno-mastoid muscle can heal so long as it is kept in a constant condition of unrest by the movement of that muscle, and it is still more difficult to conceive an easy and wholesome career for a sinus or an abscess cavity so placed. I would venture to urge that the employment of rest should be a routine measure in the treatment of every case of scrofulous neck; that it should supplement all other local procedures, and among them hold a predominant place. The application of this measure may be considered before the detailed treatment of the affection is discussed.

Krohne & Sesemann.

To secure rest to the neck I originally used a simple "stock" of gutta percha. This I found to be somewhat cumbrous and uncomfortable, and not applicable when any disease existed about or

below the inferior maxilla. Moreover, the stock concealed from view the seat of trouble, and required to be frequently removed. For the last three years I have made use of a splint, the main features of which can be gathered from the annexed woodcut. It is made of felt, and takes its fixed point from the shoulders and back. The centre of the splint is strengthened by a slender strip of metal. This strip is carried up along the back of the neck, and at the occiput meets a cross-piece which is moulded to the outline of the skull. The cross-piece is kept in place by a narrow ribbon that encircles the forehead. In young girls and women the cervical part of the splint can be entirely concealed by the hair. The splint in children and in males may be secured by straps, as shown in the figure; in adult females it may be more conveniently attached to the stays. The felt is freely perforated, and the whole appliance is exceedingly light. It has been made for me by Messrs. Krohne and Sesemann. I have made extensive use of this simple apparatus. It keeps the neck still, but not rigid, and after the first few days of its use it ceases to be irksome. Patients have worn it without interruption for three, six, and nine months. It is perhaps needless to say that it is not worn at night. Of its value I can speak in strong terms, and to this employment of rest I would ascribe results in some cases that I believe no other method of treatment would have secured. I have used it not only in the treatment of scrofulous affections, but also as a splint after operations upon the neck, in cases of burn and of accidental wound, in carbuncle, and also in cases of lupus that have been treated by scraping. Under these varied circumstances I have convinced myself that the healing process has been very materially aided by this simple appliance, and in many instances the wearing of the splint has increased rather than diminished the patient's comfort for the time being. [For local treatment see *Synopsis.*]—*Lancet*, *June* 5, *p.* 1060.

75.—ON THE TREATMENT OF SCROFULOUS NECK.

By Kendal Franks, Surgeon to the Adelaide Hospital, Dublin.

I think I am justified in asserting that the time has come, when the treatment of this disease, except in its earliest stage perhaps, should pass from the domain of the physician, and should be entrusted to the surgeon. In the earlier stage, while still the diagnosis remains uncertain, the treatment is one of expectancy, tempered by constitutional measures. But when once the diagnosis is assured, and there is no evidence that resolution is likely to take place, bearing in mind the nature of the disease we have to deal with, and the consequences which may follow from waiting too long, I am strongly convinced that the surgeon's art should intervene to assist Nature, and to do that quickly, which unassisted she would

do if she could, but often fails in accomplishing, or only succeeds when her victory has cost her dear. When as yet the poison has infected but one or two glands, we have good grounds to hope that by their removal we may eliminate from the system every focus of infection. Every case is not suitable for the same method of treatment, and in some cases we have little choice left to us as to what method we shall adopt. Of all the various surgical methods at different times suggested, there are three which I shall specially refer to as being the best. Each one is applicable to a different class of cases, and although they have been applied indiscriminately by their special advocates, I think there are well-marked lines which should divide those cases in which a special method is applicable from those in which it is not. These three methods are (1) scooping, (2) cautery puncture, and (3) excision.

Of the first method—scooping—I need say but little, as the subject has been very fully and ably discussed in a lecture by Mr. Teale, which was published last year. I shall merely quote a few of his conclusions, with which I entirely agree. 1. "That surgery can secure the healing in a few weeks of gland cavities and sinuses, even though they have existed for years, and of wounds resulting from the removal of caseous and suppurating glands." 2. "That in dealing with sinuses, gland abscesses, and decayed or semi-decayed lymphatic glands, the action of the surgeon must be vigorous and thorough." 7. "That in dealing with a sinus the channel should be enlarged by the knife or by Bigelow's dilator, and the whole of its granulating surface should be scraped off. Where a sinus is shallow and covered by thin blue skin, this imperfect covering should be rasped away by the scraper, and any cutaneous overhanging edges should be trimmed off by the scissors." 8. "That, in dealing with a sinus or an abscess, the surgeon should not rest content until he has discovered and eradicated the gland, always remembering that if it be not obvious there is sure to be a smal track leading through the deep fascia to the missing gland. This opening should be enlarged so as to admit the spoon of Lister's scraper." These conclusions which I have quoted explain the classes of cases to which I think this method is suitable, and to which I believe it should be restricted. These classes embrace cases in which sinuses exist, or in which a superficial abscess communicates through an opening in the cervical fascia with a suppurating and caseous gland beneath. It is also sometimes a good treatment to adopt when the changes going on inside a gland have given rise to inflammation of its capsule and to the formation of firm adhesions between it and its surrounding tissues. For in these cases enucleation of the entire gland is extremely difficult. I have employed this method in many cases, and my experience of it has strongly impressed me with the belief that the classes of cases I have mentioned are those to which the method should be restricted. For in all of these cases the

method of excision is fraught with too much difficulty to authorise us to adopt it in preference to this apparently simpler plan; but, on the other hand, it should not be extended to cases in which enucleation can be readily performed, and for this reason. In most of these tuberculous glands, the gland capsule shares in the disease, and in the scooping operation this is necessarily left behind; moreover, there may be, and there frequently are, enlarged and tuberculous glands in the neighbourhood, which have not yet softened. These escape the spoon, and later on become the foci from which fresh infection starts. Of much less importance is the fact that the incision after enucleation seldom takes more days to heal than that after scooping takes weeks. On these several grounds, I hold that the scooping operation should *only* be done in those cases in which excision is inapplicable.

The second method of treatment is that by cautery puncture. It has found its chief advocate in these countries in Mr. Treves, and it has also found much favour in France. Mr. Treves expresses the opinion that it is "one of the very best operative measures at the disposal of the surgeon for the cure of scrofulous glands." He thus describes it:—"In this operation I make use of a thermo-cautery point about as thick round as a No. 7 catheter. This point, having been heated to a bright-red heat, is thrust through the skin into the substance of the gland, and passed in three or four directions in the body of the tumour before it is removed. . . . . If no pus or cheesy matter follows the removal of the iron a simple zinc dressing may be applied, but if any such matters escape then a poultice should be ordered. . . . . It is more adapted for adherent than for movable glands." This method I have lately employed, and in certain cases I think it should be productive of good. Its *modus operandi* would seem to be that the intense heat destroys the tubercle bacilli and their products, and it leaves a channel for their escape externally which does not allow of extravasation into the neighbouring cellular tissue. It seems to me that in softened adherent glands, it would probably be more effective than the method of scooping.

The third method of dealing in a radical manner with these tuberculous glands is by excision. It is specially suitable in those cases where the glands are not adherent. The operation is easier the harder the glands are—that is, the less advanced they are in the process of suppuration. The great advantages I claim for this method are that we can in most cases entirely remove all the affected parts, including the capsule of the gland. The wound is a clean incision, mostly through healthy skin, and therefore, with strict antisepsis, heals by first intention, and leaves a scar which in process of time becomes white and often unnoticeable. When the glands are non-adherent, they can be enucleated with great ease. On the 8th of this month, through an incision an inch and three-

quarters long, I removed eight glands, three as large as walnuts, and all of them caseous. Seven days after, the wound was healed, and the scar even then scarcely noticeable. But when the tubercular process has been allowed to run its course for a long time, and adhesions have formed, then the real difficulty is experienced, and often a tedious dissection is required before the diseased glands can be removed. And here let me say that this difficulty is often of our own making. We meet a case in which two or three glands in the neck are swollen and hard. A careful inquiry into the history of the case will satisfy us that the glands are scrofulous. But instead of dealing with them at once, we allow the disease to spread, more glands to become infected, and adhesions to form, whilst we wait. Wait for what? To try the effects of this or that external application, painting with iodine, or a host of other remedies, which experience should have taught us in that stage are no remedies at all. Sometimes the delay is due to our unwillingness to make a cut which may leave a scar, and then nature takes the matter in hand, the gland softens, an abscess forms, and the end of it is that a far worse scar is left than would have resulted from timely intervention. Besides, all this time other glands are preparing to go through the same process. Such things ought not to be. What I maintain is, that the earlier we attack these glands the less we shall have to do, and the smaller and more insignificant the scar will be; and, what is more important still, the focus of the disease may be got rid of through quite a small opening. Often, however, we have at least this satisfaction, that we cannot blame ourselves if the disease has become extensive. It may be so when first we see the patient, but even in the most extensive cases of scrofulous glands we may hope for a cure by surgical art. I have notes of fifteen patients from whom I excised tuberculous glands. Two were operated on twice and two three times, making in all twenty-one operations. Some of these were comparatively simple cases, two or three glands only requiring removal.—*Lancet*, *June* 26, 1886, *p.* 1216.

76.—ON A NEW FORM OF EPITHELIAL CANCER OF THE FACE (THE CRATERIFORM ULCER).

By Jonathan Hutchinson, F.R.S., &c., London.

It is a matter of common knowledge that well-characterized "rodent ulcers" are rarely seen, excepting on the face, and mostly near the eyelids, and that upon these regions the other varieties of epithelial cancer are scarcely ever met with. I have now, however, to introduce a competitor upon this special territory. There is a form of malignant growth of epithelial type, but of remarkable peculiarities, that produces an ulcer which, provisionally, I have been accustomed to speak of as the crateriform ulcer. It is met

with, so far as my experience goes, only on the upper part of the face, and more especially prefers the precise localities of the common rodent ulcer. It is rare, and I have seen only six or seven examples of it. All of them, allowing for differences of stage, were exactly alike.

The first stage is a bossy, rounded lump, which rapidly attains considerable size, and presents a somewhat conical summit. At this summit ulceration takes place, and, with exceedingly little of suppuration or obviously destructive inflammation, a deep cavity forms. It is at this stage that the term crater-like is applicable. The walls of the crater are of much thickness and of great firmness. The growth is much less vascular and less succulent than that of rodent, and, whilst it is easy to scrape the latter away, it is quite impossible to do so with this. I attempted it in one instance, and, though I used large and sharp instruments, the procedure was very unsatisfactory. The patients in whom these very peculiar ulcers form are like the subjects of rodent in all respects. It begins usually in those past middle age, and without any obvious cause. It is rapid in its progress, and grows as large in a few months as rodent would in as many years. It shows, so far as I have observed, no tendency to fungate or become warty, and in this respect, as well as in its hardness of structure, density, and thickness, it differs from what we observe in common epithelial cancer of other parts.

I am very sorry that I am not by any means as yet in a position to give the complete clinical history of this singular variety of local disease. I have not watched any single case to its end, and I do not know whether it usually causes the lymphatic glands to enlarge. All the cases which I have seen were subjected to early operation, and it would seem that excision is very successful, and relapses exceptional. In one case in which I excised the right upper eyelid of an elderly woman on account of a growth of this type, no recurrence ever took place on this side. Two years later a precisely similar growth developed itself on the other eyelid with exact symmetry. This second rapidly grew to a large size. It was in this instance that I attempted to scrape the growth away and failed. I believe, but am not quite sure, that enlargement of glands subsequently took place in this instance. Of four other examples of this disease—three under my own care and one under that of Mr. James Adams—I may briefly say that they all fitted exactly with the description I have given, were all seated on the upper part of the cheek, and were, one and all, excised within about six months from their beginning. So far as I know, no recurrence took place in any. Most of them were examined with the microscope, and the report always was that elements characteristic of epithelial cancer were present.—*International Journal of Medical Sciences, April* 1886, *p.* 471.

77.—TREATMENT OF LUPUS BY CORROSIVE SUBLIMATE.

By J. F. Payne, M.D., F.R.C.P., Assistant-Physician to St. Thomas's Hospital.

Several cases of lupus during the past year have been treated at St. Thomas's Hospital, by a local application of perchloride of mercury. This application was suggested by Prof. Doutrelepont, of Bonn (Jan. 1884), with the object of destroying the tubercle bacilli which have been found in lupus. This may be thought a theoretical reason, considering that the bacilli, though found in lupus, are generally present in very small numbers. But there is after all every reason to consider lupus as a local infective tuberculosis, and the employment of parasiticides seems a rational treatment. What is more important, it seems a practically useful one, as I have found it in several cases. The method first adopted was that recommended by Doutrelepont, viz., keeping the surface covered with a watery solution of corrosive sublimate applied on lint, and covered up with oil silk or gutta percha. This method, however, is, for obvious reasons, not easily applicable to outpatients. I then tried a sublimate solution mixed with glycerine to prevent evaporation, to be applied several times a day, so as to keep the skin moist with it. This did good, but I could never be sure that it was kept constantly applied. Accordingly, recourse was had to another method of bringing the remedy in contact with the skin, viz., by dissolving it in collodion. This was found to produce in a satisfactory manner the results reported from the remedy.

The effect, in whatever way the local treatment is carried out, is: (1) Points of suppuration appear in the lupus tissue, or a moist excoriated surface is produced; (2) this heals and the lupus in that part is wholly or partially cicatrised, so far as the remedy has acted. In superficial patches complete destruction of the lupus tissues is effected; in thick masses the destruction is only partial. The process is sometimes painful; sometimes no pain is complained of. The strength of solution employed was in the first instance that recommended by Doutrelepont, viz., $\frac{1}{10}$ per cent. or half a grain to the ounce. Afterwards the strength was gradually increased up to four grains to the ounce (hyd. perchlor. gr. iv, collodion $\overline{3}$ j).

It should be said that the cases in which this method was used had mostly been treated by scraping or other surgical methods, and only scattered patches of no great size remained. These patches were, however, in some instances completely destroyed, in all very greatly improved. It was used also in two cases of extensive lupus of many years' standing, where scraping or any similar method was objected to.

In another case under treatment this year where large superficial patches were left after a scraping operation, a complete cure was

effected. On the other hand, in two cases of inveterate lupus in women, of thirty years' standing, not very much good was done.—*St. Thomas's Hospital Reports, vol.* xiv, *p.* 236.

78.—ON LICHEN CIRCUMSCRIPTUS, VEL CIRCINATUS.

By J. F. Payne, M.D., F.R.C.P., London.

In most of the patients affected with this disease the effect of wearing warm woollen clothing was very evident. Of the eight cases of men, four were in the habit of wearing a thick flannel vest all the year round, both day and night, without changing. A fifth wore a thick under-garment equally constantly, though it was made of cotton. A sixth did not at the time wear any flannel, but had just come out of prison, where he had warm woollen garments, and while there the eruption had appeared.

In another case (a man aged 44) it was impossible to trace any such relation, but this case was complicated with chronic eczema of the head, or rather the eczema was of several years' standing; the other affection of some months only.

The eighth case was that of a boy aged 12, and was in several respects different from the others, so that there may be some doubt as to whether the affection was really the same. Putting aside this case the influence of clothing in six out of seven cases was unmistakeable.

The comparative rarity of the disease in women I believe to be due to the fact that women seldom wear woollen underclothing. One case of the three females was, however, a typical one. A women aged 30, suffering from pulmonary phthisis, with well-marked physical signs, was in the habit of wearing a *flannel* vest next the skin day and night, and came with a well-marked eruption of lichen circumscriptus, which had started from the spinal and sternal regions, and spread over the greater part of the trunk, and on to the thighs. The other female cases were children, a girl aged 6, and an infant of 16 months. These were in some respects different from the others, and resembled that of the boy spoken of above.

Since this disease, though not very uncommon, is not always recognised, and its connection with clothing is ignored or denied by most authors, I will venture to quote a few more cases which came under my care for other diseases, in the general out-patient department, during 1884.—W. S., æt. 57, robust man, with bronchitis. Eruption of lich. circ. on back and chest, wears flannel undershirt day and night.—H. E., æt. 32. Man, with phthisis. The same eruption. Flannel day and night.—R. Y., æt. 36. Man, with dyspepsia. The same eruption. Flannel day and night.—A.B., a robust man, with rheumatism. The same eruption. Flannel vest day and night.

I might quote others and could also give several cases from the

Blackfriars Hospital for Skin Diseases; but I think these will suffice to show that the eruption deserves the name of "flannel rash," as it is called by my colleague at the Hospital for Skin Diseases, Dr. Wyndham Cottle. (The connection of lichen circumscriptus with flannel or other woollen garments appears to be an observation which has become traditional at the Hospital for Skin Diseases, though by whom it was first made I cannot say. It may be worth while to point out that the best picture of the disease, and indeed the only good one, is contained in Erasmus Wilson's Portraits of Diseases of the Skin, 1855, Plate A D, where it bears the name *Lichen annulatus serpiginosus*, with the synonym *Lichen marginatus*.)

Dr. Unna, of Hamburg, states that he has only lately identified the lichen circumscriptus of English writers with an affection which he has been in the habit of calling "eczema flavum," and of which he has found no adequate description published. He thinks a name proposed by Lailler, "eczema acnéique," much more suitable. There can be no doubt that the name which we give to this affection is a very bad one. There is little resemblance between this and other diseases called "lichen," and to denote it as a species of the genus lichen is to perpetuate the unfortunate superstition that every skin disease must have a name modelled on the Linnean botanical terminology. But the number of skin diseases which are so fortunate as to possess an appropriate name is not large, and after all the name does not much matter, provided that it is not taken for a definition. Since this disease is certainly not either lichen or eczema, I would suggest, as a perfectly neutral name, that it might be called *Circinaria*.

Dr. Unna further calls attention to the relations of this malady with eczema, and speaks of cases in which it has, by extension, led to general and very severe outbreaks of eczema. This has not come under my observation; but in three of the cases reported this year there was a complication with eczema. It was, however, in all three eczema of the scalp, and in one of them it was rather that there had been eczema, the condition of the scalp at the time being simple seborrhœa. Furthermore, in a large number of the cases, certainly more than half, there was *seborrhœa of the scalp*. But true eczema of any other part of the body I have not seen.

Dr. Unna further speaks of the disease as "without doubt parasitic," but he does not name the parasite producing it. I have also a strong conviction that the disease *must be* parasitic; but I can say with some confidence that it is not possible to find in this disease the fungus of tinea versicolor or that of tinea circinata. Scales merely scraped from the surface show no fungus whatever. However, results obtained lately by a different method of investigation lead me to the belief that there is a vegetable parasite, of which I cannot say more here.

The three cases of children mentioned above, a boy of 12, a girl of 6, and an infant, belong to a type somewhat different from the cases just described, with respect to which I do not feel certain whether it is identical with the disease now spoken of or not. In this type the patches are more scattered, not occurring onthe trunk alone, but on the limbs. The appearance is more like the pityriasis circinata of Vidal (and apparently the pityriasis rosacea of Gibert means the same thing), the patches being scaly, and not always ringed, but sometimes continuous, looking like a very slight form of psoriasis. The same form occurred lately in a medical student. These cases are more obstinate, do not yield so readily to local treatment, but get well with arsenic. The connection with wearing woollen clothing is not clear. Further observations are therefore required to show whether these cases come under the present head or not.—*St. Thomas's Reports, vol.* xiv, *p.* 229.

79.—A NEEDLEWOMAN'S BURSA OF THE SECOND FINGER.

By R. Clement Lucas, B.S., Assistant-Surgeon to Guy's Hospital.

It is reasonable to conjecture that with the development of new employments, which are being constantly multiplied by the growth of civilisation, new diseases may take origin or new phases may be impressed upon the outline of what is old. It is fair to suppose, on the other hand, that modifications in the mode of living and the cessation of certain industries may cause corresponding disorders to be lessened in frequency, or even to be ultimately effaced. In the latter category I am inclined to place the small but troublesome and painful affection which is the subject of this note. It is because I have not seen it described that I put it on record; but possibly at some previous time it was so frequent as to be thought unworthy of mention, whilst in the future it may become extinct, and the case I am depicting may be one of the last relics of a former civilisation. The introduction of sewing-machines must at any rate have lessened its frequency, and that it is now exceedingly rare I have good reason to believe.

When Hood caught the sympathies of a nation by vividly depicting in his "Song of a Shirt," the terrible poverty and misery of a sempstress's life as she stitched and stitched "with fingers weary and worn," he probably had no clear conception of what the "worn" fingers implied, if regarded from a pathological point of view. One at least of the small infirmities induced by overwork, and directly occasioned by the kind of work which poor needlewomen perform, this paper will bring to light. The painful history of the infirm old woman who furnishes the subject of this memoir, is possibly more horribly real than any which moved Hood's tender heart and facile pen.

A poor, decrepid, old widow-woman, M. L., 78 years of age,

presented herself among my out-patients on Thursday, Sept. 11, 1884. She came complaining that a swelling on the end of the second finger of her left hand, which had been gradually increasing for some years, now gave her so much pain and inconvenience as to interfere seriously with her work. She told us that her average earnings amounted to not more than three shillings a week, on which sum she found it possible to live without entering the workhouse. Her work was shirt-making and sewing of the coarser linens and calicoes.

The second finger of her left hand was occupied on the palmar aspect of the terminal phalanx by a rounded fluctuating swelling. The swelling was somewhat tender on firm pressure, but not inflamed on the surface. It was diagnosed as a subcutaneous bursa. The interest in the case rested chiefly upon the manner in which this abnormal bursa was developed. It will be found that with the linen stretched over the left forefinger for the purpose of stitching, the whole weight of the fabric falls on the projecting end of the second finger. Long years of such pressure had resulted in the development of this bursa, how many and with what little interval of rest the freedom which ordinary workers enjoy may offer some indication. The tumour was tapped with a trocar and cannula, and about a drachm of clear, viscid, white-of-egg-like fluid was withdrawn. After the tapping the swelling of the end of the finger shrank into wrinkles of skin. The end of the finger was afterwards strapped and bandaged. Whilst she was under observation no return of the swelling occurred, but as, with her, attendance at the hospital involved a "walk which cost a meal," I do not feel confident that she would have attended again if my first treatment had proved unsuccessful. The object of this paper is, however, to point out a malady, not to advocate a treatment, which would not differ from that of bursæ in other parts of the body.—*Guy's Hospital Reports*, 1886, *p.* 143.

80.—ON PSORIASIS OF THE TONGUE.

By P. F. Harvey, M.D., Captain and Assistant-Surgeon, U.S.A.

The disease, in general, is characterized by the appearance of patches and streaks or raised areas, on the lingual or buccal epithelium, of a whitish, bluish, or yellowish colour in different cases, and ranging in consistency from that of a piece of wet kid leather to that of cartilage. It begins very insidiously, and its early stages generally pass unnoticed by the absence of severe subjective symptoms. After the development of the first patches new ones frequently form, and it is the evolution of these which has been chiefly studied. The earliest morbid appearance, according to Schwimmer, is a red spot due to hyperæmia of the superficial bed of the mucous membrane; on the tongue this red spot is usually

studded with granulations the size of a pin's head, due to the tumefaction of the fungiform papillæ. In this stage, which may last for several months, the implicated epithelium is not altered, but gradually its vitality is modified, it thickens, hardens, and changes in colour, passing successively from bluish-white to grayish and silvery-white in spots the size of a grain of wheat, which spread and become confluent, forming the spot or patch that generally comes under the notice of the surgeon. These changes take place very slowly. Schwimmer says that so long as the lesion is progressive it is surrounded by a narrow hyperæmic border, which disappearing, the extension of the plaque is momentarily or definitely arrested.

If seen at its early stage, well-directed treatment generally removes the disease, but unfortunately attention is not usually called to it until it has lasted for some time and become more or less confirmed. In one form (ichthyosis), the patches are in the form of a thick, fibrous, pearly-white covering on the tongue, upon which may be seen lines and striæ forming polygonal spaces. Ultimately these lines may become fissures, which suppurate and become very painful. Another form (psoriasis) is characterized by an occasional peeling off or desquamation of the involved epithelium, leaving bare, ulcer-like spaces which, later on, are again covered over by altered epithelium. All forms of the disease are very chronic; any one form may remain stationary, or slowly progress, and in a certain percentage of cases the tendency is to malignancy, epithelioma making its appearance at some point of the affected area, and running its fatal course with the same rapidity as when brought about by other causes.

A milder form of the disease is called by Butlin "smoker's patch," and its more advanced stage, leucoma. For this variety, however, I prefer Schwimmer's term, "leukoplakia buccalis," as it locates the lesion, describes its appearance, and does not name another disease; moreover, the disease does not necessarily depend upon smoking; it is rather the expression of an irritant acting upon a sensitive mucous membrane. I have observed in all cases of hyperæsthesia of the mouth and lips a thin, sensitive, external skin, with a tendency to congestion of the capillaries. All food of a hot or stimulating character, tobacco smoke, or alcohol, in such cases, excites a burning sensation of the tongue and roof of the mouth, which is apt to persist for some minutes. Acids appear to aggravate this tendency, and alkalies to relieve it. This, I take it, is the predisposing condition to this affection.

There is still another form of buccal plaque which authors have and still regard as belonging to the class of affections we are describing, namely, the buccal lesions of tertiary syphilis; but in my opinion they should be classed altogether separately, as the disease in question is idiopathic, wholly independent of a

constitutional virus, is different in its physical appearance and in its behavior, and is not in the least benefited by specific treatment.

It may not always be perfectly easy in all cases to differentiate between the oral manifestations of syphilis and idiopathic leukoplakia or ichthyosis, but a correct conclusion can be generally reached by observing that the specific lesion is the less obstinate and the more painful of the two; but the question can be definitely settled, as a rule, by the therapeutic test. Iodide of potassium and the mercurials aggravate the genuine, but cure the specific disease.

Leukoplakia buccalis, and its allied disorders, are very rare. According to Schwimmer, their relative frequency is 1 in 250 affections of the skin. They are unknown in childhood and infancy, but occur most frequently between the ages of thirty and fifty. Henry Morris gives the extreme ages at which any form has been observed, as twenty-two and sixty-seven. Women are almost exempt. Debove did not encounter a single case among them in twenty-four cases; but a few cases are mentioned by other authors, three of which were complicated by the disease affecting the vulva. One of these cases was reported by Weir, one by Vidal, and one by Schwimmer.

The etiology of these oral affections differs in different persons; in some, the mucous disease is simply an extension of the cutaneous, and being part of the latter, yields to the treatment that benefits it. Again, I believe it is possible for a psoriatic or ichthyotic diathesis to declare itself in the mouth, and the other parts of the body to remain free. As a rule, no tendency to cutaneous eruptions is observable in persons who become the victims of either of these affections, but a sensitive buccal and lingual covering is the predisposing condition, and the local action of irritation the exciting cause; that local irritation may be alcohol drinking, tobacco smoking, hot or peppery food, forcible and repeated compression of the cheeks against the teeth or other hard substance, or, in fact, irritation from any source whatever, if long enough continued.

The cure of any well-marked case is to say the least, of doubtful attainment, but I would submit the following line of treatment as that which my experience and research persuade me to be the most likely to secure that end:

1. Idiopathic and irritative patches, usually expressive of debility, require a restorative regimen and tonic treatment. The use of tobacco in all forms should be discontinued as much on account of its general as its local effect. Alcohol should be interdicted, or used with caution, as nothing can be much worse in its local action upon the disease even when very much diluted, and I believe its general action to be, in the main, unfavourable. Debove regards the morbid change he observed as identical with cirrhosis; how much alcohol may have been concerned in its production we

can only surmise—that it perpetuates and aggravates it I am convinced. All stimulating articles of food, ginger, pepper, mustard, carbonic acid waters, hot liquids, hot solids, &c., must be avoided. Cold does much less harm than heat, and ice cream, &c., can, as a rule, be eaten without injury. The general health should be brought up to as high a standard as possible by good food, regularly eaten, suitable exercise, frequent bathing, and sufficient sleep. General medication should simply be directed toward improving the general health, and topical applications need only look to keeping the buccal secretions in good condition. This treatment also answers for the disease when engrafted upon the anæmic condition of late syphilis, or that arising from prolonged use of mercurials. It is, however, always independent of specific poison, and must be treated accordingly.

2. Well-marked patches of *leukoplakia* should be treated in the same way, but we may in addition use weak chromic acid solutions as directed by Butlin, advancing by slow degrees to the strength advocated by Hillairet and Weir if necessary. This should be done with caution, as strong applications are in general unfavourable. In addition, it will be perfectly legitimate, I believe, to resort to the constitutional use of arsenic, at first in tonic doses and afterward carrying it to the point of toleration, if necessary, and not otherwise contraindicated. Its thorough dilution should be directed, as otherwise it may do harm locally by its acridity. Weak alkaline washes should be occasionally used, once or twice daily, and it is important that the soothing and restorative plan of treatment be followed for years, if necessary.

3. Ichthyosis of the tongue seems to occur in perfectly healthy and robust men, and in its treatment the question of vital repair may not be one of so much importance. If the patch is not too thick, it may be first brushed with chromic acid solution, 1 : 8, or if not likely to be benefited by that application it may be curetted. But, as laid down by Heath, its thorough removal is necessary and, when clearly diagnosticated, there is no question as to the proper course to take ; it should be entirely removed by surgical means—the galvanocautery, the sharp spoon, or the knife—for otherwise its transformation into cancer is only a question of time.

4. As the localization of eczema, psoriasis, lichen, pityriasis, &c., on the tongue or inside the cheeks appears to be possible, it is well to bear this in mind, and if a coincident cutaneous eruption is found it may aid us in reaching a diagnosis.

Finally, an important question is, What cases are likely to undergo the epitheliomatous transformation? All writers agree that *ichthyosis linguæ*, whether limited or extensive, is a precancerous condition. Leukoplakia affecting the tongue is also a forerunner of cancer, only a little less certain than ichthyosis; when seated on the mucous lining of the cheeks or lips, Debove is of the

opinion that it is less apt to display malignancy, but Verneuil and Debove each cite one case of cancer following its localization on the cheek, and Bassenreau one case in which the lip was the seat. *Psoriasis*, as defined by Heath, when properly treated may remain benign or undergo a cure, and hence is less apt to pass into cancer, but if neglected will probably do so.

The so-called "smoker's patch," or "smoker's glossitis," or the erythema of irritation, being the first discoverable morbid state, is usually curable by proper treatment, and hence does not express the menace that the other forms do.

Weir thinks that the malignant tendency in any form is directly as the epithelial thickening. But simple irritation of the mouth, as of the skin elsewhere, if long enough continued, may eventually terminate in epithelioma.—*International Journal of Med. Sciences, July* 1886, *p.* 111.

81.—ON LANOLIN AND ITS THERAPEUTIC USES.

By Walter G. Smith, M.D., King's Professor of Materia Medica in Trinity College, Dublin.

This substance for the introduction of which into therapeutics we are indebted to the distinguished Professor of Pharmacology in the University of Berlin, is a valuable addition to our resources, and doubtless will come into general use. It is a very interesting body from more than one point of view.

1. It is a neutral fatty salt of cholesterin; that is, cholesterin (a monatomic alcohol) takes the place of glycerine, which is the radical of ordinary fats.

2. Liebreich has demonstrated the wide diffusion of this cholesterin-fat throughout the animal kingdom.

3. It is not a secretion arising from sebaceous or other glands, but is a product of retrograde metamorphosis of keratin or keratin-yielding tissues.

Liebreich suggested, but was not prepared to prove, that cholesterin-fat was present in the keratin-cells, or in the granular layer of the epidermis from which the keratin-cells are derived; but Lewin (*Berl. klin. Woch.*, 1886) has since shown that its presence can be demonstrated micro-chemically in the granular layer of the skin by Liebermann's test (acetic anhydride and sulphuric acid).

4. Lanolin commends itself, pharmaceutically, as a basis for ointments.

Shortly after reading Liebreich's paper, I obtained some lanolin from Mr. Martindale, and began to prescribe it. Within the last two and a half months, I have employed it frequently (over seventy times), and feel assured that it possesses properties which deserve attention from all practitioners. These properties are:—

a. It is capable of absorbing and intimately blending with large

amounts of water, standing thus in marked contrast to popular notions of the mutual relations of water and fats. The lanolin of commerce is a combination of neutral cholesterin-fat with about 30 per cent. of water.

b. It is neutral to test-paper, is not liable to rancidity, and is not easily saponified by alkalies.

c. It is miscible with glycerine, unlike other fats.

d. It rapidly, and in a remarkable degree, possesses the power of penetrating the epidermis.

e. Hence lanolin greatly facilitates the absorption through the skin of drugs mixed with it. So marked is this, that, with poisonous drugs, such as the toxic alkaloids, less (about half) than the usual proportion should be prescribed in ointments. The vaselins and paraffins hinder, rather than favour, the passage of drugs into the skin.

I will briefly mention two or three cases illustrating its uses.

Eczema.—Captain —, a patient of Dr. Gilbert Lynch, consulted me while on a visit in Dublin. He was a corpulent man, with varicose veins in both legs, and was much troubled by an angry outbreak of eczema rubrum on the legs, on and off for two years. For this he had had the best advice in London, but without very satisfactory results. When I saw him the leg was weeping, fiery red, and intolerably itchy. The following ointment was prescribed. Lanolini ʒ xij; adipis benz. ʒ j; liq. plumbi subacet. fort. ♏xv; acidi carbol. ʒ ss; olei lavand. ♏v. Speedy improvement ensued; the itching was calmed; he was able to walk about in comfort, and in about three weeks was practically cured. Ethereal solution of nitrate of silver (20 grains to 1 oz.) was twice applied.

Psoriasis.—Miss G., aged 25, was sent up to me from Doneraile, County Cork. For fifteen years she had been subject to psoriasis, here and there; and in January, 1886, the disease suddenly developed into an extensive eruption over the face, chest, back, and limbs; in fact, no part of the body was spared. She was covered from head to foot with small circular scaly patches. I first prescribed a lotion of soft soap, spirit, and carbolic acid, which smarted her. A few days afterwards, this lotion was applied to one limb, and ointment to the opposite limb (lanolin and lard, including pyrogallic acid 40 grains, and salicylic acid 20 grains, respectively, to the ounce). This ointment caused no irritation, and exercised a more favourable influence on the eruption. Progress, however, being rather slow, I substituted for the above ointment a lanolin and chrysarobin ointment (20 grains to 1 ounce). This produced speedy and marked improvement. In a week there was a striking change for the better, and in a fortnight all infiltration and scaliness had vanished, and no trace of the eruption remained, except some brown pigmentary stains. White precipitate ointment was used on the face, and with good effect. Arsenic was given internally.

Rheumatic Exudation.—Miss F. was attacked, four years ago, with stiffness and pain in the back of the neck. This gradually became worse, and, for some months, she suffered acute pain in the neck, especially upon movement. The head drooped down on the chest, she could not sit at table with comfort, and her life was becoming miserable. On each side of the cervical spine, especially the left, there was an indurated ridge of thickening, apparently in and between the muscles, and very tender to touch. She was given iodide of potassium and chloride of calcium internally, and was directed to rub in gently, but thoroughly, an ointment of lanolin and lard, containing fifteen grains of iodide of potassium, twenty grains of iodoform, and three grains of hydrochlorate of morphine to the ounce. Improvement was soon apparent, and steadily continued; and, in about three weeks, she could elevate and rotate the head freely, and with little pain, and the hard infiltration at the nape had greatly diminished. The degree of pliancy conferred on the skin was remarkable, and the effect of the ointment in alleviating the local discomfort was unquestionable. Hitherto, I had found little reason for faith in the efficacy of iodide of potassium applied externally.

I have also used lanolin in acne, and in some other affections; and, speaking generally, can confirm the statement of Professor Liebreich and Dr. Lassar (based on over 400 cases), that it does not cause irritation of the skin. It is true that some cases of eczema were none the better, perhaps even aggravated, after the use of a lanolin-ointment; but similar experience is not uncommon with divers modes of treatment in obstinate cases of this fickle disease, and lanolin is no cutaneous panacea. In ringworm of the head, I have not had sufficient time to judge fairly of its effects.

With chapped hands, its effects are extremely satisfactory, and several bad cases occurring among my friends during the recent severe weather were cured by a single inunction of lanolin. For this purpose, perhaps, simple lanolin is the best to use, as it is rapidly incorporated into the skin. For general use, its stickiness should be counteracted by admixture with one-eighth or one-fourth of another fat (lard, castor-oil, &c.). A few minims of oil of lavender, or oil of eucalyptus, will communicate an agreeable odour to the ointment.—*British Med. Journal, June* 12, 1886, *p.* 1105.

VENEREAL AFFECTIONS.

82.—REMARKS ON THE TREATMENT OF SYPHILIS BY SUBCUTANEOUS INJECTIONS OF MERCURY.

By J. Astley Bloxam, F.R.C.S., Surg. to Charing-Cross Hospital.

Mr. Bloxam mentioned the excellent results which he had obtained at the Lock Hospital and elsewhere in the treatment of

syphilis by intra-muscular injections of a solution of the perchloride of mercury. The solution for injection contains six grains of the perchloride to the ounce of distilled water, and should be made fresh for each *séance*. Since he had adopted this method, now a period of some eighteen months, upwards of 1500 cases had been treated with the best results. The sore generally begins to heal very promptly after one or two injections, the secondary symptoms are markedly modified, and after a course of treatment extending over a year, more or less, the patient is enabled to discontinue his attendance. Towards the latter end of the course of treatment the injections may be given less frequently, and, as a general rule, not more than from eight to twelve grains of the perchloride are injected in all. It is undesirable to repeat the injections oftener than once a week, as otherwise salivation might be induced, and the quantity injected each time (one-third of a grain) is found to be quite sufficient until the next time. There are several advantages attending this method of exhibiting mercury. In the first instance it is only necessary to see the patient once a week, when sufficient mercury is injected to last until the following week; secondly, salivation is not produced, as when the patient continued to take mercury for a whole week, away from the supervision of his medical attendant; thirdly, the gastric derangements which are so apt to follow the administration of mercury by the mouth are by this means avoided; lastly, the ease and certainty of the administration, which enable the surgeon to do his own dispensing with a minimum of trouble. A little quinine is generally given during the course as a tonic, but no other form of mercury is administered.

The injection itself is a very simple operation, but certain rules have nevertheless to be observed in order to obviate any inconveniences which might otherwise result. An ordinary glass hypodermic syringe is used with a fine needle (the needle is apt to become very brittle from the action of the mercury on the steel, and requires to be replaced from time to time), containing twenty drops of the solution, equivalent to one-third of a grain of the perchloride. After filling the syringe, the needle is freed from adhering solutions by washing, in order to avoid irritation in its track, and is then plunged deliberately into the muscular tissue of the buttock, selecting for this purpose the spot corresponding to the muscular mass of the glutei, into the substance of which the injection is made. If this precaution be observed, no discomfort or abscess formation follows, the only solitary case in which this has occurred being attributable to the injection having been made into the areolar tissue over the trochanter. The pain of the injection is but slight, and soon passes off. It is desirable that the patient should not take active exercise immediately after the injection, as it has been noticed that blood may be effused at the

point of injection, giving rise to the sensation of a severe bruise of the part, which lasts for several days. The same effect has followed the puncture of a large vessel, but in any case the result is only transient, and disappears after the lapse of a few days. If for any reason the buttock be objected to as the site of the operation, the injection may be made into the trapezius muscle at a point two inches above the superior angle of the scapula, but the injection into the buttock is attended with less inconvenience.

Mr. Bloxam mentioned that his own opinions were strongly in favour of syphilis being bacillar in origin, thus accounting for the specific action of mercury in the treatment of the disease. In support of this view, he alluded to the remarkable researches of Messrs. Eve and Lingard, whom he had furnished with blood and chancrous tissue from patients at the Lock Hospital, the subjects of syphilis. They have succeeded in detecting and cultivating a bacillus which could generally be found in the blood and tissues of syphilitic patients who had not been subjected to the influence of mercury, or who at any rate had not taken it long. In a contribution to the Lancet of April 10th, 1886, they say: "In none of the cases from which cultivations were obtained had mercury been administered for any length of time, and a long series of failures have led us to reject entirely cases which have been long under mercurial treatment." With this fact in view, the importance of obtaining a thorough and certain permeation of mercury in the system is apparent, and, without claiming any originality in this method of treatment, the lecturer wished to bring before them the extremely favourable results he had obtained from it.—*Lancet, Aug.* 21, 1886, *p.* 337.

83.—ON SYPHILIS.

By John Chiene, Professor of Surgery, Edinburgh University.

If common diseases are the most important, then this disease and its results are among the most important. Taught by Spence that soft chancres and syphilis are due to one poison, taught by Syme that all the evils of syphilis are due to mercury, and knowing that these doctrines are still held by many surgeons, I am glad of this opportunity of stating my firm opinion that there are two distinct poisons, and that mercury is of immense value in the treatment of syphilis.

Syphilis is an infective fever; a specific organism is planted on an abraded surface, it lies quiescent for a time, and germinates if the soil is suited for the growth of the organism; if the soil is unsuited the growth is aborted, but I have no evidence that this aborted form is the poison which gives rise to a soft chancre.

It germinates locally; it passes into the blood stream through the lymphatic circulation; in its passage along the lymphatic

vessels it is arrested in the lymphatic glands and there germinates; it is also arrested in the capillaries of the skin and mucous membranes, and there gives rise to various local lesions, the different early and superficial skin and mucous membrane lesions. The poison may get a firm hold of the individual either in consequence of the virulence of the poison or in consequence of the suitability of the soil, and then gives rise to evil sequelæ or bad consequences, often called tertiary symptoms.

These sequelæ do not necessarily follow, and are becoming less frequent: 1st. Because the poison is becoming less virulent. 2nd. Because the poison is not now finding so suitable a nidus as it once did. These two factors interact on one another; the syphilitic poison is becoming less virulent because both factors are at work; the country is becoming gradually syphilized, the soil is being gradually worn out, the poison is thereby gradually being weakened. To grow a plant and to get good seedlings you require a healthy vigorous plant and a good soil; if the soil is worn out the seedling, however strong, does not thrive; if the seedling is weak, the soil, however suitable, does not favour its vigorous growth and development.

At one time mercury, given in large doses until the patient was poisoned, so weakened the individual that, although the secondary symptoms might be masked, and apparent temporary good results followed, no permanent good resulted, and tertiary symptoms were liable to occur. Nowadays the sequelæ are principally observed in weaklings—weaklings either from hereditary transmission, or from acquired feebleness, the result of evil courses persisted in by the person himself after the poison had entered his system.

Syphilis is gradually wearing itself out, but still the administration of mercury in small doses is of value. The patient will tell you that he feels the better of it, that it acts as a tonic. The explanation of this feeling of wellbeing is probably a simple one. Syphilis is a fermentation, a zymotic disease; the fermentation is due to the growth of an organism in the tissues. Corrosive sublimate has been proved to be a most powerful anti-fermentative. Give it in doses which will not be poisonous to the individual, but poisonous only to the organism of syphilis, and the growth of the organism will be checked, the strength of the individual is not impaired, and gradual elimination of the poison will take place, because, like all zymotic conditions, it has a tendency to a natural cure. The disease may undoubtedly, taking advantage of this tendency, be treated without mercury; by attention to the general health, by keeping the individual at a high level of vitality the poison may gradually disappear from the system, by opposing to its growth and development the anti-fermentative action of the healthy tissues; but even in healthy people I am satisfied that mercury is of value, and my rule is to give it from the very beginning, and

continue it for a year or eighteen months from the beginning of the attack. The feebler the individual the greater is the necessity of a mercurial course.

The diagnosis of syphilis is founded on the period of incubation. If, after a suspicious connection, a period beyond ten days elapses before any local manifestation is evident, then the probability is that we have to deal with a case of syphilis. In such a case begin the mercury at once. In making your diagnosis do not be deluded by a local manifestation, either in the form of a gonorrhœa or a soft sore, either of which appear shortly after connection. The patient asks, "Have I syphilis?" How often is the answer given, "No," in one sense true—true of to-day, as far as any one can tell, but not necessarily true three weeks hence. Your answer should be, "I cannot tell; you *have* a gonorrhœa; you *have* a soft sore, but the time has not yet arrived to enable me to say that you *have not* syphilis. Six or eight weeks must elapse before I can speak with any certainty." The patient is not satisfied; this you cannot help.

Another snare to the unwary practitioner is that the patient always tends to blame the *last* connection. This connection is probably the cause of the gonorrhœa or soft sore, while the patient may have been inoculated previously with the syphilitic poison, which may at the time you see him be lying quiescent, and become evident at a subsequent date. At the end of the first week the gonorrhœa or soft sore becomes painfully evident; the average period of incubation in syphilis is three weeks; if two connections follow one another at an interval of less than a fortnight, it is evident that when the patient comes to you with the gonorrhœa or soft sore you cannot speak of his freedom from syphilis, which may show itself soon after the gonorrhœa, if caught from the first connection; if caught from the second connection, it may not show itself for a fortnight or three weeks after you are consulted.

The hard nodule, typical of syphilis—not a sore, not an ulcer, but an elevation, a local hypertrophy at the seat of inoculation—shows itself from ten days to eight weeks after connection. The average period of incubation is, in my experience, three weeks. This typical local hypertrophy may ulcerate if it is irritated in any way, but ulcerative destruction of tissue is an accident, not an essential of the primary lesion. This fact alone seems to me to go a great way in itself to show that the poison which causes a soft chancre—an ulcer—is different from the poison of syphilis. I cannot say how they were related in the past; I cannot say what may be their relations in the future. Neither an antiquarian nor a prophet, but simply dealing with the conditions as they come before the practical surgeon at the present time, I have no hesitation in saying that there are two distinct poisons—the one giving rise to a local ulcer, the other to a constitutional condition; the

one probably more nearly allied to a putrefactive poison, the other to a truly infective poison; the one septic, the other pathogenic.

The typical syphilitic hypertrophy may be masked if the poison has effected its entrance on the urethral mucous membrane, it may also be masked if the poison has its seat on a soft sore; the latter is more common than the former. These cases do occur, and often deceive the practitioner. They are, however, no evidence that the two poisons are one. There is, in my opinion, no logical resting-place between accepting the belief, held by John Hunter, and disproved by Benjamin Bell, that gonorrhœa, soft sore, and syphilis are one disease, and the belief that there are three poisons, often met with in one and the same person at one and the same time. It will surely not do to argue that because gonorrhœa is very rarely followed by syphilis, therefore these conditions may be considered as separate diseases, but because syphilis not unfrequently follows a soft sore, it is therefore more likely that these two conditions are one disease. May not these clinical experiences be simply explained by the gonorrhœal poison thriving in a different habitat from the syphilitic and soft sore poisons; that the latter have the same habitat is no proof that they are the same plant. The position is, in my opinion, untenable logically, untenable clinically.—*Edinburgh Medical Journal, June*, 1886, *p.* 1103.

84.—TREATMENT OF ORCHITIS AND EPIDIDYMITIS.

By Frederick W. Lowndes, M.R.C.S., Surgeon to the Liverpool Lock Hospital.

There is a sufficient diversity of opinion as to the best treatment of orchitis and epididymitis, the result of acute gonorrhœa, to induce me to give our experiences at the Liverpool Lock Hospital. When I first became surgeon, eleven years ago, I found that the practice adopted in all these cases was that which had been suggested by Mr. Furneaux Jordan in 1869—viz., by painting the affected testicle with a strong solution of nitrate of silver (two drachms to one ounce), at the same time enforcing strict rest in bed and supporting the inflamed organ upon a small pillow, so as to prevent it from hanging down. It had been adopted for some years previously by Messrs. Worthington and McCheane, who were the surgeons to the hospital at the time when Mr. Jordan suggested this mode of treatment; and also by Mr. Chauncy Puzey, who succeeded Mr. Worthington, during the two years of his surgeoncy. I have invariably pursued the same treatment now for eleven years, and so has my colleague, Dr. Armand Bernard, who succeeded Mr. McCheane in 1882, and has thus had four years' experience of the treatment.

At my request the resident superintendent of the hospital, Mr. Serjeant, has given me the following statistics of all the cases of

orchitis and epididymitis combined from June 1st, 1875, to June 1st, 1886, an interval of eleven years. The numbers are as follows:—

Years.	Number.	Years.	Number.
1875 to 1876 ..	32	1881 to 1882 ..	31
1876 to 1877 ..	15	1882 to 1883 ..	28
1877 to 1878 ..	22	1883 to 1884 ..	24
1878 to 1879 ..	28	1884 to 1885 ..	18
1879 to 1880 ..	30	1885 to 1886 ..	25
1880 to 1881 ..	16	Total ..	269

All these were patients admitted into the hospital; we have no out-patients.

I have always found the treatment I have mentioned most successful. The acute pain, often amounting to agony, is soon subdued, and in the majority of cases the testicle returns to its normal size in the course of a few days. Sometimes a second painting is necessary, but this suffices. In private practice I have always used the same application. When patients can be induced to take absolute rest in bed, the result is equally successful as in the hospital. When, however, patients are compelled to follow their usual occupations, the recovery must obviously be slower, as it is impossible by any suspensory bandages or by handkerchiefs, however skilfully applied, to ensure such perfect rest for the testicle as when the patient is lying in bed. I have heard it argued that rest in bed is sufficient of itself to effect a cure, but a very few cases so treated with spirit lotion as an application has convinced me that it is not so. The immediate effects of the nitrate in allaying the pain are most marked, though for obvious reasons the nitrate must act more powerfully upon the testicle while in a state of quiescence than when constantly moved, however slightly.

Mr. Jordan has informed me that he still pursues the same treatment, having every reason to be satisfied with it. It seems to me to be only just to him to give this very satisfactory proof of the value of the treatment which he originally suggested.—*Lancet, July* 24, 1886, *p.* 163.

AFFECTIONS OF THE EYE AND EAR.

85.—ON THE TREATMENT OF DETACHMENT OF THE RETINA.

By Simeon Snell, M.R.C.S.Eng., Ophthalmic Surgeon to the Sheffield General Infirmary.

Detachment of the retina has always been held to belong to the class of cases for which remedial measures can do but little, and this, despite much vaunted new drugs and surgical procedures. The cases, however, which you have seen in our clinique, and some of which I bring before you in more detail to-day, will, I doubt

not, have convinced you that, at all events in some cases, our art is able to accomplish a good deal. It is to the methods that may be pursued for the treatment of this affection, that I ask your attention; and let me bring now before you some briefly, and others more at length.

Rest in bed, in the recumbent position, and in a darkened room, is a desirable proceeding; and, at the same time, a compressive bandage may be applied over the affected eye. To this may be added the application of the artificial leech to the temple, and the internal use of iodide of potassium. The object of all treatment is the restoration of the detached retina to its proper position, and a great means towards this end would be accomplished if the subretinal fluid could be absorbed. In this way much was hoped from jaborandi, and, shortly after it came into vogue, its alkaloid pilocarpine was extensively used, and was favourably spoken of by some writers. It was used in our wards some time since, in a good number of cases, with, however, a doubtful beneficial result. We looked in vain for the excellent successes of which others had spoken, but, in most instances, it certainly did no good; and it is questionable whether, in other hands, it occupies now a prominent place as a curative agent. Its use, moreover, is not pleasant to the patient. No one can, perhaps, deny that, in some cases, benefit has resulted from one or other of the methods of treatment just referred to; but, generally speaking, if any, it has been slight and transient, and the disease has soon become again, if temporarily checked, progressive.

Let us pass now to the surgical or operative side of the question. Many years since, Gräfe passed a needle through the sclerotic, and punctured the retina. In this way, he hoped the underlying fluid would escape into the vitreous chamber. Sir William Bowman improved on this method by employing two needles.

These methods, however, looking at the subject from the manner in which other collections of fluid are treated, were hardly what were required. If there be fluid in the pleura, the chest wall is tapped, and the liquid evacuated; and the same in other parts. Why could not such a procedure be adopted in the case of subretinal fluid? Sichel is said to have punctured the sclerotic as long ago as 1859 to let the serous fluid out, and Gräfe, of Halle, has recently adopted such a procedure extensively. The credit of introducing these measures undoubtedly belongs to those just mentioned; but Dr. Wolfe, of Glasgow, has also practised a scleral incision, and has recorded some very successful cases. Gräfe performs his operation by telling the patient to look well upwards, and then, seizing with forceps a fold of conjunctiva in front of the equator, he punctures the sclerotic between the inferior and external recti muscles, and the fluid escapes. De Wecker has sought, it may be mentioned, to accomplish the

evacuation of the subretinal fluid, and the re-application of the membrane to its proper place, by the insertion of a fine gold thread seton in the sclerotic. I have never felt disposed to make use of this method.

In a large number of cases I have, however, punctured the sclerotic, and have adopted the plan already referred to, as well as one in which the knife was entered under the conjunctiva, some little distance in front of the selected point for puncture of the sclerotic. In this way, the latter was made subconjunctivally.

Dr. Wolfe proposed that the conjunctiva should be separated in front of the region of sclerotic where it was intended to incise it, and it was thus laid bare. He claims considerable success for his operations. It has been contended that there is little difference between the procedure he advocates and that adopted by Gräfe. In practice there is, I believe, a considerable difference in favour of proceeding in the way Dr. Wolfe suggests. This, at all events, is my opinion, after experience with both methods.

In Gräfe's, the fluid escapes underneath the conjunctiva, and, besides remaining there for absorption, there would very possibly in some cases be a limit to which drainage would take place, with semi-resistant structures over and around the scleral puncture. In Wolfe's the sclerotic is bared, and the fluid readily drains away. I may mention also that, ever since using the electro-magnet for searching the vitreous body, I have been familiar with the advantage of dissecting up a flap of conjunctiva, to bare the sclerotic at the selected point for incision. Sclerotic wounds heal well. The conjunctiva may be united by a suture, but this is sometimes unnecessary.

Let me now draw your attention to cases which have been under treatment, and which you have had the opportunity of observing from time to time. [Here follow narratives of illustrative cases.]—*British Medical Journal, July* 24, 1886, *p.* 145.

86.—REMARKS ON THE EXTRACTION OF CATARACT.

By Anderson Critchett, M.A., Ophthalmic Surgeon to, and Lecturer on Ophthalmic Surgery at, St. Mary's Hospital.

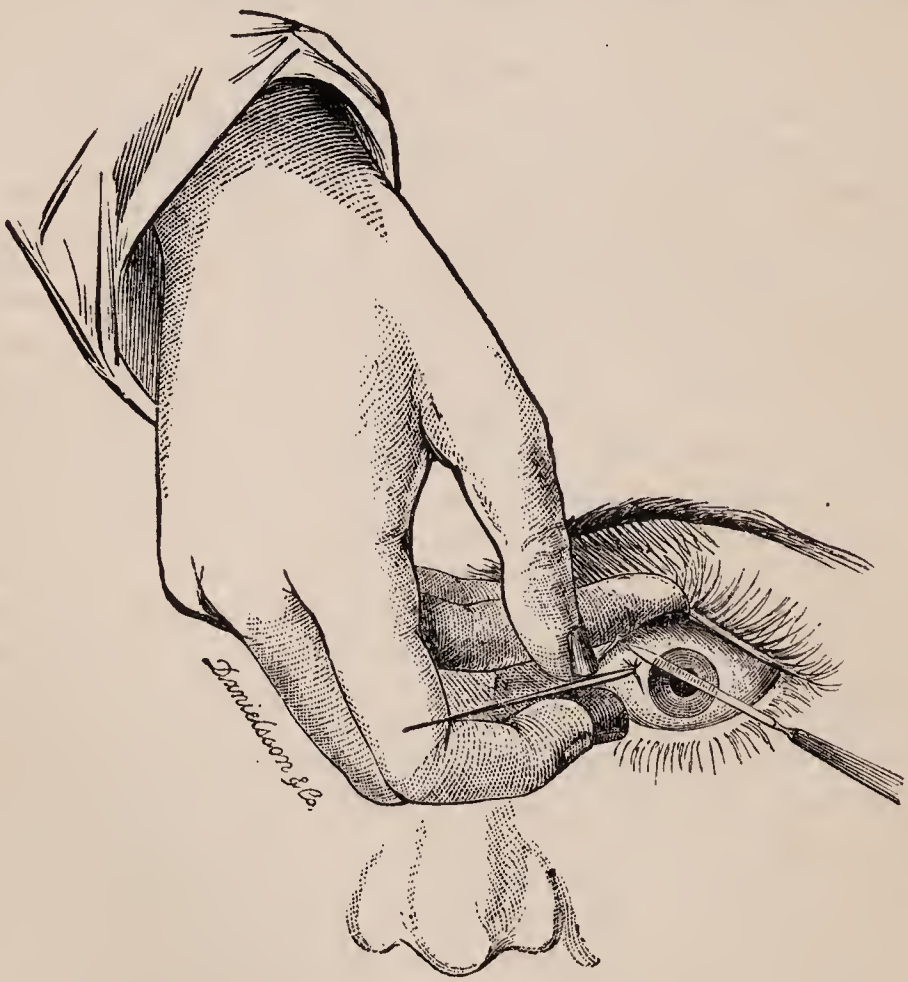
I believe that I am not overstating the case when I affirm that before the introduction of cocaine the majority of English ophthalmic surgeons were in the habit of administering an anæsthetic during the operation for extraction of cataract, unless they were able to assure themselves that they had the good fortune to deal with a calm, stoical, and non-spasmodic patient. The advent of the new local anæsthetic has in a great measure broken down our barrier of distrust, and by its aid we are now able to operate successfully on even the most nervous and sensitive of sufferers. But whilst we gratefully recognise the absence of pain which is secured

by this valuable agent, we have become aware of certain inconveniences which, unless duly guarded against, may seriously embarrass an experienced operator, and chief amongst these is the partial loss of control over the eyelids which follows on instillation of cocaine, so that the removal of the speculum either after or during an operation for cataract must be accomplished with great care, otherwise a violent spasmodic closure of the lids may produce disastrous results. I can also assure my professional brethern, from personal experience, for I have on more than one occasion kept a speculum in my eye for some minutes, that the forcible separation of the lids by our familiar wire coadjutor produces an almost uncontrollable tendency to squeeze them violently together, and there can be no doubt that the wings of the speculum afford a powerful leverage for the strong spasmodic effort which has so often ruptured a delicate hyaloid membrane and wrecked an otherwise promising operation.

I have therefore adopted a very simple method, which enables me to banish the speculum from all operations for cataract that are performed with cocaine. The chief desideratum is a well-trained and flexible ring-finger. That this digit is too often feeble and not properly under control, is a fact well recognised by pianists and other instrumental executants, and the special exercises that have been devised for its education might also be practised with advantage by ophthalmic surgeons. My plan of operating is as follows:—The eye is steadied with forceps held between the thumb and the two first fingers, whilst the ring-finger is used to elevate the upper lid to such an extent as will enable the operator to make the necessary section. The sensitive natural speculum possesses this great advantage—that it can recognise the commencement of a spasmodic effort on the part of the patient and at once give the necessary relaxation, and as the section is nearing its completion the gradual withdrawal of the finger allows the lids to close gently and without effort. If an iridectomy is to be made, the upper lid should be lightly raised at its edge, with the ring-finger of the left hand, whilst the iris is seized with suitable forceps held between the thumb and the first two fingers. It will thus be seen that the operator is able to dispense with the aid both of speculum and assistant. The above plan is so simple and, with a little practice, so easy of accomplishment, that it may very possibly have been already adopted; but as I have seen no mention of it, and as I have already operated by it successfully in a considerable number of cases both in private and at St. Mary's Hospital, I think it right to put my experiences on record. The cases where this method is most difficult of application are those in which the eyes are small and deeply seated, but a little extra patience and care on the part of the operator will surmount these obstacles; and, on the other hand, it is specially suitable for prominent eyes, where the use of

the speculum has so often proved hazardous. The knife with which I operate differs somewhat in shape from Graefe's original pattern. it will be seen from Fig. 1 that the blade begins to broaden rapidly immediately below the point which is central; the back of the knife is bevelled and the blade is rounded, so that in this respect

it resembles the Beer's knife, and does not permit a too rapid escape of aqueous. My knife is broader than those in general use; indeed, I understand that several of our foremost operators, both here and on the Continent, now prefer an extremely narrow blade. I have tried every variety of pattern, and have finally decided in favour of that which I have above described, because I find that it facilitates the accomplishment of a smooth and rapid section, and that the iris is less liable to fall in front of the edge of the knife than is the case with more attenuated blades. In making my



section, I seize the subconjunctival tissue with forceps just below the spot where I intend to make my counter-puncture. I by no means follow the direction given in some of the text-books to make

the puncture and counter-puncture exactly at the same level, because the adoption of that method necessitates the immediate commencement of a sawing movement, which drags upon the globe, and must of necessity leave an objectionable serrated edge to the flap. I am careful to introduce my knife at a lower level than that at which the counter-puncture is to be made (*vide* Fig. 2). The moment that the point emerges, an upward and onward sliding movement imparted to the knife will enable three-fourths of the section to be smoothly completed before any backward motion need be employed, and the least possible amount of violence is thus done to the internal economy of the eye. After the capsule is ruptured, I gently depress the upper edge of the section to prevent it from impeding the exit of the cataract, and if the latter should refuse to quit its home after the exhibition of moderate pressure, I am frequently able to rotate it out by applying a curette to the margin of its under surface. These and other equally useful manœuvres are doubtless well known to all experienced ophthalmic surgeons, but I venture to hope that a trial will be made of the plan I have described, in which, in suitable cases, nature's speculum takes the place of that which we have hitherto used.—*Lancet, May* 15, 1886, *p.* 913.

87.—ON THE RATIONAL METHOD OF TREATING CATARACT PATIENTS, TO THE EXCLUSION OF COMPRESSES, BANDAGES, AND DARK ROOMS.

By Simeon Snell, M.R.C.S.Eng., &c. Sheffield.

The title of this paper is similar to that of an article in the June number of the American Journal of Ophthalmology, by Dr. Julian J. Chisolm, of Baltimore, and it is so expressive that I have adopted it.

The method proposed by Dr. Chisolm is at variance with prevailing ideas, and marks, I believe, a revolution in our mode of treating cataract, and, I would add, many other cases. He asserts that our efforts at extreme exclusion of light are both undesirable and unnecessary. The eyelid is the natural splint to the eye, and the globe covered with this allows about the same amount of light to pass into the eye as was the case before the cataract was extracted. He alludes, moreover, to the fact that while on the operating table, after removal of the opaque lens, and with a strong light on the face, there is no blinking or other evidence of suffering inconvenience from it. Further, he contends that the warm coverings over the eye and the great seclusion from light so often adopted are prime factors in the causation of the photophobia and lachrymation witnessed after cataract extraction, and in this way a means of prolonging convalescence. I have long felt this myself, and have therefore always been desirous of lessening the covering

as speedily as possible. The method Dr. Chisolm advocates is to seal the eyelids with fine isinglass plaster in the manner to be mentioned presently. He records very excellent results in the sixteen cases of cataract extraction for which he had employed it; and he claims that there is less restriction for the patient with his method as to lying quiet on his back, the patient being allowed to sit up to his meals and to rise from bed when necessary, and that, as the eye is free from irritability, any covering is more quickly removed, convalescence is much more rapid, and the stay in hospital is shorter.

I am free to confess that I have seldom seen a paper that more directly appealed to me as to the justice and reasonableness of the conclusions set forth. The journal with the article in question reached me about the middle of July, and I immediately determined to adopt in practice the plan Chisolm advocated. I speak later on of the cases which have been so treated, but here I may say that the conclusion at which I have arrived from the results of those cases is such that I expect I shall be able to endorse Chisolm's words: "The revolution in the after-treatment of cataract and iridectomy patients in this hospital is complete. From this time hence, all bandages, compresses, and dark rooms will be among the things of the past, to be remembered only for the discomfort they occasioned." That is my present, and, I believe, will be my future, experience. The list of operations in which the method is applicable may, moreover, be extended, and it is useful in injuries of the conjunctiva, cornea, or sclerotic—in fact, in all wounds, operative or accidental, except those in which the discharge is likely to be free, and which would probably require a frequent change of plaster.

Passing to the operations in which I have employed it, I find a total of eighteen cases in hospital and private practice. Twelve of these were operations on the crystalline lens, seven being extractions of senile cataracts, two traumatic cataracts, two removal of dislocated lenses, and one needling a soft cataract in a child. The extractions were as follow, and I take the first case as a typical one, and give it in detail.

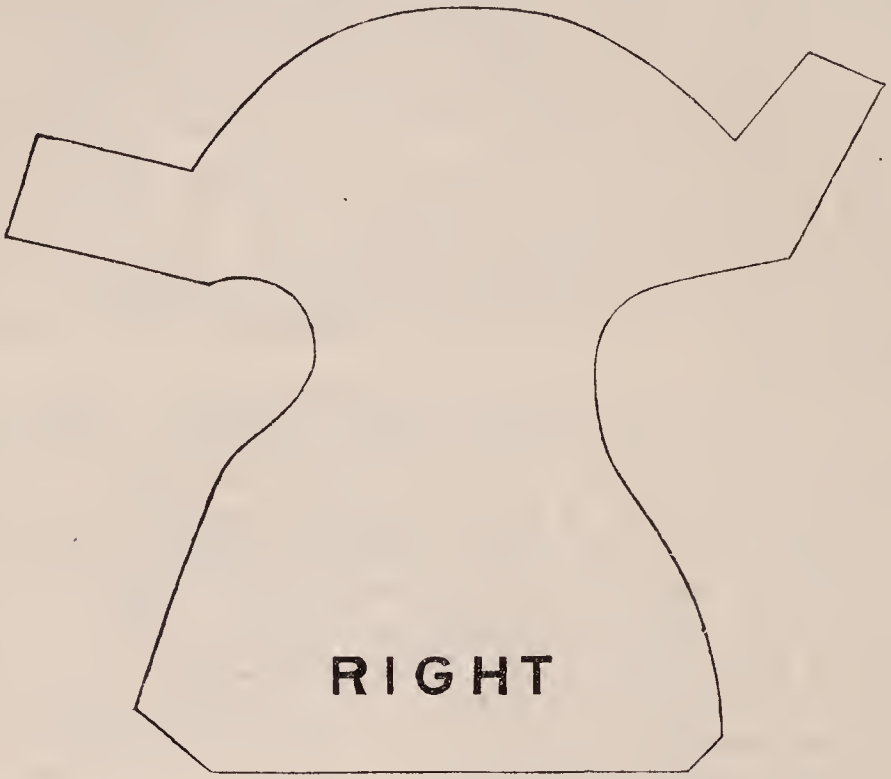
Case.—Mrs. S——, aged sixty, a patient in the Sheffield General Infirmary, was operated upon on July 27th last. The cataract (left) was extracted by a shallow lower flap; a small iridectomy was performed, and there were no accidents attending the operation, which was done, as my practice is, in the ward, with the patient lying in her own bed. A 2 per cent. solution of cocaine, with salicylic acid, had previously been instilled. Both eyes were next sealed up with isinglass plaster in the manner to be presently referred to. The ward was not darkened, and a screen was placed round the bed, more for the protection from currents of air than anything else. She made no complaint of the light. The next

day everything was well; a very little secretion had exuded from the eyelids and become fixed in the plaster. She had been allowed more liberty as to moving about than is usually accorded to such patients. On the third day the eye looked well, and there was no complaint made. When the plaster was removed the patient immediately opened the eye, and bore light well; the wound had healed, and the eye was looking in every way satisfactory. The plaster was reapplied. On the fifth day the plaster was removed and a shade used over both eyes; the patient was allowed to get up. On the seventh day the patient was walking about the ward, and found no discomfort from the light. She was as well as most cases are between the second and third week. On the tenth day (Aug. 6th) she left the infirmary, walking home unaided. In the other eye there was an incomplete cataract, and the sight was very indifferent.

Chisolm gives the following directions as to applying the plaster:—"The lid of each eye was kept closed by a piece of isinglass plaster, $2\frac{1}{2}$ in. long by $1\frac{1}{2}$ in. wide. The piece of plaster, made thoroughly pliant by being soaked in water, was spread over the lids from brow to cheek, and carefully adjusted by stroking it with the rubber spoon used for pressing out the lens. In a very few minutes this piece of diaphanous silk plaster was dry, and the patient was ready to walk from the operating table to his bed in the fourth story of the hospital." He elsewhere speaks of the piece of plaster being large enough to extend from cheek to brow and from one canthus to the other.

At first I adhered to these directions, but I was led soon to vary somewhat the plan. Thus I found it undesirable, and indeed unnecessary, to place the plaster over the eyebrow, and the next step was to cut the upper edge of the plaster to the curve of the orbital margin; and the advantage suggested itself of leaving a portion on either side to project at each orbital angle. The piece on the inner side was thus obliquely upwards, and the outer one was horizontal, for fixing it to the malar bone. Then, instead of reaching from canthus to canthus, it soon appeared advisable to constrict the plaster at the point where it passed over the margins of the lids, and to leave a small space at either side for drainage, and the one on the inner side for the instillation of atropine or eserine drops. The shape of the plaster may be cut for each eye, but I have had a form made in metal which indicates probably the one generally required. Any particular alteration an eye needs is easily made. The woodcut (see next page) indicates the shape of the plaster, the silk side being uppermost. I have had the forms cut in the metal solid, as the drawing represents, and also as a hole in a plate of metal corresponding to the shape given. This latter is perhaps more useful, as it keeps the plaster flat at the time the shape is marked out on it.

The kind of plaster is of great moment. I have experimented with several kinds of silk, muslin, cambric, gauze, &c., and the form now used is the best yet arrived at, and, indeed, answers our purpose admirably. It is silk salicylated isinglass plaster (Seabury and Johnson's). It is quite transparent; put on a book, it is very



easy to read printing through it. It quickly dries, readily adheres, is easily fixed in its situation, and does not tend to curl up, which is often a characteristic of such plasters. The plaster, before being applied, may with advantage be a little snipped at several places along its edge, to enable it to fit more accurately, and whilst it is drying it is often advantageous to push the cheek upwarde to prevent displacement by facial muscular movements. In cataract cases it is essential to seal up both eyes, and this is generally true offother cases, but occasionally I have only closed one eye, and often allow the sound organ liberty before the other is permitted it. It would appear that formerly in some hands plaster was used for closing the eyes after cataract operations, but I believe in a much less complete manner than Chisolm has advocated, and the routine practice, with perhaps every operator, has long been the use of bandages and pads, which his plan numbers among the things of the past. Such a method would hardly have been feasible in the pre-cocaine days. My experience of the plan is particularly gratifying, and is, moreover, pleasing alike to my assistant and the nurses.

In conclusion, the advantages, particularly in cataract cases, of the plan Chisolm advocates over the routine method by bandages,

may be summed up under the following heads:—1. More comfortable to the patient, and less dread of injury by movements. 2. Less discomfort to nurse and friends, or, in hospital, to other inmates of the ward, from less darkening of rooms. 3. Less liability to disturbance, and thus more freedom in movements permitted to patient. 4. More evenly and exactly fitting. 5. And thus allowing a more correct coaptation of wound, and, it is believed experience will prove, a more ready healing. 6. Inspection of eye is allowed without disturbance, for in this way swelling of lids or discharge are readily seen. 7. Affords a ready means of using eserine or atropine without disturbance of eye, and allows of drainage of tears, &c. 8. Absence of photophobia and lachrymation; when eye is opened, a ready examination in good light is allowed, patient being able to open eye fully. 9. Less confinement to bed, a quicker convalescence, and shorter stay in hospital. —*Lancet, Sept.* 18, 1886, *p.* 525.

88.—RESECTION OF THE OPTIC AND CILIARY NERVES AS A SUBSTITUTE FOR ABLATION OF THE EYEBALL.

By C. Bell Taylor, M.D., F.R.C.S.E., Surgeon to the Nottingham and Midland Eye Infirmary.

Notwithstanding the great advance effected by the substitution of enucleation for the ancient and formidable practice of scooping out the whole contents of the orbit, it cannot be denied that the operation of ablation of the eyeball still leaves much to be desired. The practice of exenteration—an operation which, I may remark in passing, has recently, in Dr. Knapp's practice, given rise to most alarming symptoms—the substitution of a glass vitreous chamber, and the late Mr. Streatfeild's proposal to destroy the whole conjunctival surface after enucleation, may, I think, be fairly taken as evidence that modern surgeons are not altogether satisfied with the existing state of things; and, indeed, it would be strange if it were not so, for, when an eye is excised, it frequently happens that excessive absorption of orbital fat and tissue gives the patient a ghastly appearance, which is only partially relieved by the insertion of a glass eye. The artificial substitute itself, in many cases, gives rise to traumatic conjunctivtis, accompanied by profuse discharge; and if, as common sense dictates, we withhold the eye for a time in order to treat this affection, the orbit is apt to retract, vegetations spring up, the eyelids turn inwards, adhesions form, and it is difficult, sometimes impossible, to replace it. At best, the patient is most unpleasantly reminded every night and morning of his misfortune; and, in some cases, photophobia, lacrymation, and sympathetic irritation of the fellow eye, accompany each insertion; all these disagreeables are intensified and aggravated in the case of the working man, the most frequent subject of enucleation. To

him the annual expense of an artificial eye is a serious tax, which is increased by occasional breakage. If he wears it at work, it becomes encrusted with dirt and mucus, the surface is abraded, and it is apt to drop out; if he leaves it at home, the orbit becomes a miniature dustbin and receptacle of all kinds of foreign bodies, a state of things which is only slightly mitigated, if at all, by the use of a dirty shade.

Now, it cannot be denied that these are very great and very serious objections to enucleation of the eyeball; nevertheless, when an eye has been crushed by a blow that has probably felled the patient, when it has been penetrated by a foreign body, when it is the site of a neoplastic growth which may prove malignant, and when it belongs to a patient who cannot be trusted to take care of himself, or to return if threatened with sympathetic ophthalmia, I think that it is the best, because the safest practice, to excise the globe. When, however, the eye, although sightless, is an ornamental appendage, when it is merely affected by neuralgia, by attacks of recurrent inflammation, or luminous spectra, which torment the sufferer, or when it belongs to a patient who, although threatened with sympathetic ophthalmia, refuses to submit to enucleation, I think the very best thing we can do for him is to divide the optic and ciliary nerves, an operation which I am in the habit of performing in the following way. I pinch up the conjunctiva immediately over the insertion of the internal rectus tendon, draw up the muscle with a blunt hook, and divide it close to its insertion. I then seize the eyeball with sharp-pointed forceps or hook, pull it well forwards, turn it inwards, and sever the optic nerve as far back in the orbit as possible, the globe is then turned completely round, and the stump of nerve left attached to its surface shaved off close to the sclerotic.

During the last six years, I have treated thirty-one patients in this way, and the results have been most gratifying; relief has been complete, motion in all directions is perfect, and, in point of fact, it is difficult in some cases to tell which eye has been done. Herein, it appears to me, is the solution of Mr. Adams Frost's pertinent question: "What shall we do with a lost eye?" Enucleation is mutilating and unsatisfactory, exenteration is dangerous, and, moreover, apt to excite sympathetic ophthalmia, a glass vitreous appears to me likely to aggravate the evils of a foreign body by its constant presence in the orbit, and destruction of the conjunctiva is merely the expression of despair.

We are bound in all honour and by every law, not to remove or destroy any portion of the organism which can by any possibility be saved, and I think we shall best fulfil this injunction, this first canon in surgery, by adopting in suitable cases an operation which, as Professor Schweigger has remarked, "is quite as effectual as enucleation, and has this great advantage, that it does not sacrifice

the eyeball, or render an artificial eye necessary."—*British Medical Journal, Sept.* 18, 1886, *p.* 546.

89.—ON THE TUNING-FORK IN DIAGNOSIS OF LESIONS OF THE INTERNAL EAR.

By P. McBride, M.D., F.R.S.Ed., Surgeon to the Ear and Throat Department, Edinburgh Royal Infirmary.

Until quite recently, it was—and by many aural surgeons it even now is—an accepted theory that, if the tuning-fork be heard by bone-conduction better in the deaf or deafer ear, the labyrinth is intact. To those who have followed the otological literature of the last few years, it must be known that this rule is by no means without exceptions. Twelve years ago, or more, Cassells, of Glasgow, published a case in which, after exfoliation of the left cochlea, the hearing power actually improved, and all the notes of the piano were perceived. More lately, Schwartze and Christenneck had under their care a patient who, in spite of the loss of the right cochlea, continued to hear the tuning-fork (C) by bone-conduction louder in the affected ear. Jacobson, too, has recorded a case in which, notwithstanding suppurative disorganisation of the cochlea, hearing by bone-conduction was retained until just before death. The last contribution towards this subject is by Gruber, who records an instance of exfoliation of the two upper convolutions of the cochlea associated with only partial loss of hearing on the affected side and retained bone-conduction. Schwartze, in his recently published work, accepts frankly the position which alone is tenable—assuming, as we have every reason and right to assume, that these observations are accurate. According to this author, retained bone-conduction only proves the trunk of the auditory nerve and its centre to be sound, but does not necessarily imply a healthy condition of the labyrinth. But, even with this evidence before them, there may probably be found those, who, on the ground that such facts are contrary to physiological common sense, will refuse them the consideration they deserve in clinical investigation.

The following is a brief record of a case which recently came under my observation. Mr. —— some months since fell from a height, striking the right temporo-parietal region. He was stunned, and for two days could not stand. During this time, there was paresis of the right arm and leg. Giddiness was at first intense, and is still troublesome. His right ear has been deaf ever since. The tuning-fork (the large fork used by Politzer, furnished with brass clamps, and vibrating 512 per second), placed on the middle line of the forehead, was better heard in the right ear, and was also distinctly perceived from the mastoid of the same side. The same remarks also apply to a small fork of higher pitch. The

giddiness is increased by turning from right to left, but not from left to right. The right ear is quite deaf, and even words spoken loudly through a conversation-tube are not heard. The drum-membrane on the right side was slightly depressed, but moved freely outwards on Valsalva's experiment—needless to say, without improving the hearing power.

Taking all the facts of this case together, we cannot but arrive at the conclusion that the labyrinth of the affected side was injured, either by concussion or fracture; and yet the hearing by bone-conduction was not only as good as, but even better than, that of the healthy ear. It did at first occur to me that a rupture in the continuity of the chain of ossicles might account for the symptoms, but the persistent giddiness could not be explained on this hypothesis.

This case, then, taken together with the evidence before adduced, proves to my mind that better hearing by bone-conduction is by no means certain proof of a healthy condition of the internal ear. It is well known and admitted that the converse proposition is also subject to numerous exceptions. Thus we meet with cases of chronic middle-ear catarrh, in which bone-conduction is interfered with, and which are readily amenable to treatment. In acute inflammation of the tympanic cavity, the same state of matters is often produced.

To discuss this matter in all its bearings would occupy too much space, and would, I feel, in the present state of our knowledge, be of but slight value. I cannot help, however, before I conclude, calling the attention of those who are interested in otology, to the fact that the time-honoured tuning-fork test must now be considered as uncertain, whether in the positive or negative sense. No doubt it is a valuable aid to diagnosis, so far as we at present know, in a majority of cases; but then arises the question whether the number of exceptions may not increase more than we expect, as our knowledge augments.—*British Medical Journal, April* 10, 1886, *p.* 688.

MIDWIFERY,

AND THE DISEASES OF WOMEN, ETC.

90.—ON MENSTRUATION, ANÆMIA, AND CHLOROSIS.

By Willoughby F. Wade, F.R.C.P., Senior Physician to the General Hospital, Birmingham.

[Dr. Wade, in his first Ingleby Lecture, discusses fully the important question of the causal relation of menstruation to anæmia and chlorosis, in young girls. He says:]

We know that much has been written on the differences between the catamenial secretion and blood. That the distinctions made are just from a chemical point of view I am willing to admit. But I none the less firmly maintain that, from a clinical point of view, this discharge is a veritable hemorrhage, and that this is a cardinal fact which can never with safety be overlooked in practice. That there are cases of menorrhagia which, no one would dispute, are to be regarded as hemorrhages I assume. And who, I would ask, is prepared to fix the boundary which separates these from ordinary, or even from what are reckoned as insufficient, catamenia? What, then, are the systemic effects of loss of blood? These depend upon the quantity lost, the frequency of repetition, the state of the individual at the time, and no doubt to some, possibly to a large, extent upon idiosyncrasy. The effect of repeated losses depends, further, on the activity of the blood-making organs, and their power to restore the hæmatic equilibrium. It is consistent with our knowledge of these effects, as derived from examples both of spontaneous and artificial hemorrhages, that the loss of a few ounces of blood should be a matter of indifference to a healthy person whose blood-producing apparatus was normally active. It is therefore quite comprehensible that an average catamenial evacuation, reckoned at about 5 ounces, should not produce any very sensible effect on healthy women. On the other hand, in persons already the subjects of anæmia, whether that be due to spontaneous hemorrhage, to artificial hemorrhage, or to some more recondite cause, the effect of further loss of blood, in quantity even less than that of an average menstruation, is often to produce very distinct effects. Without going into details, it may be said that the new hemorrhage removes the symptoms which had resulted from previous hemorrhages. This may happen time after time, but with a difference. The difference being, that each time the period of relief is of shorter duration; that is, the symptoms return sooner, and probably with an increased intensity. Ultimately, a

time comes when the hemorrhage ceases to be followed by any relief, or if by any, it is so slight and so transient as to be difficult of discernment.

Now I affirm, after very numerous inquiries extending over many years, that the effect upon an anæmic girl of an ordinary catamenial loss is strictly analogous to other hemorrhages upon similar subjects. There are two standards by which the amount of loss may be adjudged to be normal or abnormal. One is by comparing it with the average loss of women. The other, and the more important, is by comparing it with the usual loss of the individual herself. But, I go further, and say that an evacuation subnormal in amount, by whichever standard it is measured, is capable, under certain circumstances of not rare occurrence, of producing similar effects. This is the case even when, in addition to being subnormal in amount, the loss is subnormal in colour. The accuracy of these observations may readily be tested by each one of you for himself. But the critic must be familiar with the effects of repeated loss of blood, even in small quantities. He must further be prepared to make a minute and exact inquiry into the clinical history of his patient. And, lastly, he must enter into the investigation with an unbiased mind, not prepossessed with the idea that because the periods are apparently normal, or even deficient in quantity or colour, it is impossible for them to produce the effects of a hemorrhage.

But it may be said, granting the accuracy of my observations, do they prove that the anæmia of girls is due to the repeated loss of blood by the catamenia? To this I would answer, in the first place, medical authorities are not agreed to offer us any other, or rather they are agreed to offer none, and to say that none is known. In the second place, I would ask you this question: If you met with a case of anæmia, in which there was habitual loss of blood by hemorrhoids, by epistaxis, by hemorrhage from any other mucous membrane, would you refuse, because the loss was comparatively small, to admit that it was the cause of anæmia, and to base your treatment upon that view? To carry, not my argument, but my statement, a little further, I may add that cases are not unfrequent in which the first period produces anæmia. And on this point let me mention a very frequent source of fallacy. A mother, when she brings her child to us under these circumstances, very often says that she does so because she has never been regular. Whereas, in a considerable number of instances minute inquiry will elict the fact that there has been one, possibly that there have been two or three periods, and what the mother means is that menstruation has not been "regularly established." Older females will often lead us astray by stating that they have not been regular for so many months, meaning not that no period has occurred, but that it has been deficient in some respect; indeed, sometimes they

will make the same statement when the loss has been, in their own opinion, excessive. Again, we meet with females of all ages, who, disliking to be interrogated upon this subject, or upon the state of the bowels, or (perhaps even more frequently) upon the state of the urine, will deliberately try to put a stop to our inquiries by telling us point blank that in these respects there is nothing whatever the matter with them. These and such-like misstatements, prompted no doubt by a sense of delicacy, may, by misleading us, be most injurious to themselves. To revert to the subject of anæmia: that term, and not chlorosis, has been used advisedly. That all cases of anæmia in young women are not to be correctly styled chlorosis may be admitted. But does it necessarily follow that they differ in kind? It is held by some authorities that they do; and we are by some told that chlorosis is a neurotic disease. That is a term which in this connection does not convey to my mind any distinct meaning. To those who use it, it conveys only, so far as I can make out, the idea that the disorder depends primarily upon some as yet undiscovered aberration of a nervous centre at present unknown. Undoubtedly attenuation of the blood may arise from other causes than direct loss of it. Amongst these may probably be included mental depression.

As a matter of fact, disturbances of the physiological constituents of the blood-mass do in different persons produce different effects. If the general influences of the blood on the tissues are impaired or interfered with, some tissues or parts will suffer more than others. One general characteristic of neurotic persons is instability of some nerve centre. This instability is reputed, and with justice, to be aggravated by innutrition of the unstable centre, due either to local or to general causes. It is not, therefore, so very improbable that we have here the secret of the reputed dependence of chloranæmia upon nerve disorder. A formidable objection to this theory will at once occur to many minds: cases of chloranæmia with amenorrhœa, in which a return of the period is followed by an amendment in other respects, which previous treatment had failed to procure. I pass by the explanation that possibly the flow was the first expression of returning health. It must be kept in mind that the effects of loss of blood are of two classes: one, the depression of the system at the time; the other, the totally opposite condition of "hemorrhagic reaction."

Probably in no case would the use of venesection be more unanimously reprobated, be regarded as more inconsonant with modern views, than in long-lingering subacute rheumatic fever. Many years ago a physician, than whom no one was more profoundly acquainted with symptomatology and with the therapeutics of the old school, no one a more acute observer—the late Dr. Eccles—made to me an observation which seemed to me then, as it seems now, a most remarkable one. It was that in several such cases,

which had thwarted his best advised efforts, recovery, speedy and complete, had followed venesection.

Another consideration is by no means unimportant. While a disastrous disappointment may be concealed, so, on the other hand, may be the renovating buddings of hope; hope based oftentimes on circumstances so commonplace, or attentions so trivial, as to escape the observation of the most sympathising and watchful relative; hope sedulously concealed from the most intimate and trusted friend; hope almost unconsciously entertained by the patient herself. We are thus often left in ignorance of that undisputably potent factor in the well-being of a girl—the "state of her heart."

It seems to me a truism, the formal statement of which almost requires an apology, that a repeated loss of blood must produce anæmia unless the system is able in the interval to replace that which has been abstracted. Protracted clinical observation has made it appear to me just as true that, as a matter of fact, the system is in innumerable instances unable to effect this replacement; that, indeed, it is not unfrequently unable for a time to replace that which is lost by a first, even if small, menstruation.

The following quotation from one of the greatest clinicists of this century commands at least respectful consideration. "I may add," says Niemeyer, "that, according to my observation, obstinate chlorosis attacks all young girls without exception in whom the menses have appeared in the twelfth or thirteenth year, and before the development of the breasts and pubes"; that is to say, before the blood-forming apparatus is sufficiently active to do more than replace blood consumed in ordinary wear and tear.

It will be here convenient to remark that probably race and climate, and also, no doubt, other conditions, have something to do with the development of anæmia and the phases of chlorosis. During the first six or seven years of my medical life, I was familiar with the practice of the Derby Infirmary. A notable feature there was the number and severity of these cases. Nor did this circumstance seem to be entirely due to the fact that the patients were many of them employed in the large hot rooms of silk-mills. When I came to Birmingham as house-physician to the General Hospital, I was struck by the comparative infrequency of severe cases; and although no doubt a good many minor cases applied for relief, these did not seem to me at all proportionate to the difference in the population and in the number of patients.

It is interesting to observe that the opinion of American writers is very strongly in favour of the neurotic theory of chlorosis. Now, so far as I have had opportunity of forming an opinion, it is that among the inhabitants of the United States are to be found an eminent proportion of neurotic constitutions. There seems, at any rate, reason to think that here, as elsewhere, the justness of our

ultimate conclusions is likely to be proportionate to the breadth of our survey. Indeed, it seems to me to be antecedently probable that the secondary or more remote effects should be different in those whom we call neurotic subjects to what they would be in persons whose nervous system is differently constituted.—*Lancet, June* 5, 1886, *p.* 1055.

91.—SUDDEN DEATH FROM HEMORRHAGE INTO THE ABDOMINAL CAVITY DURING MENSTRUATION.

By Edmund J. Penny, M.R.C.S., Berkhamstead, Herts.

At 4 a.m. on November 11th, 1885, I was summoned to R. E. T., aged 27, a resident of Hayes, Middlesex, who was said to be very ill. Within ten minutes I arrived at the house, and found that life was extinct, with all the signs of collapse present. Her husband stated that she had always enjoyed good health, and was the mother of two children. She was perfectly well until about 7 on the previous evening, when she complained to him of pain in the region of the stomach, which she attributed to the fact that she was menstruating at the time, and said she thought she would go to bed. She gradually grew worse, was extremely restless, complained of pain in her chest, and of difficulty of breathing; but refused to allow medical aid to be summoned, as she said she would be better in the morning. Shortly before 4 a.m., her condition becoming more serious, my attendance was requested; but the patient had already died during her husband's short absence.

A necropsy was made on November 13th, by Mr. E. J. Parrott and myself. The body was well nourished. Rigor mortis was present. The surface was unusually blanched. There were well marked blood-stains to be seen at the external genitals. The lungs were found to be healthy; the pleura was normal, and the pleural cavity contained its natural quantity of serum. The pericardium was natural, with the usual amount of fluid. The muscular tissue of the heart was healthy. The ventricles were contracted; there was a small clot of fibrin in the left ventricular cavity. The valves were healthy. After the thoracic viscera were removed, the diaphragm was seen to bulge upwards in an unusual manner particularly on the right side. On opening the abdominal cavity, a large quantity of dark fluid blood immediately escaped, and the whole of the right side of the abdominal cavity was found to be full of fluid and semi-coagulated blood; while the right iliac fossa was occupied by a tolerably firm clot, of the size of a fœtal head. The viscera were carefully removed and examined, and were found to be healthy, with no trace of lesion. The aorta and its principal branches were also minutely examined, and found to be everywhere healthy, nor could any lesion be discovered in the veins. On removing the large clot from the right iliac fossa, and tracing it onwards, it was

found to lead to the right ovary; and a small but firm clot, at least an inch in length, was discovered attached to the outer surface of that organ. Two ruptured Graafian vesicles were also seen, to one of which an ovum was adherent; and in the neighbourhood of these, several small blood-vessels were found to be distended with clot, one of them being distinctly ruptured; and it was to this site that the clot above-mentioned was found to be adherent The left ovary also showed signs of activity having taken place previously to death; and on its surface was seen small blood-vessels filled with clot, whilst an ovum was also attached to it. The uterus, which was not removed, appeared to be normal.

The occurrence of hemorrhage into the abdominal cavity, due to the rupture of a Graafian follicle during menstruation, is undoubtedly rare; but it is, notwithstanding, admitted by various writers on Obstetrics, and notably Dr. Graily Hewitt. Hemorrhage, in this case, evidently took place very slowly, occupying at least nine hours, while the quantity of blood extravasated was enormous. It seemed as if the whole body had been drained into the abdominal cavity; and the facts above stated, to our minds, so clearly indicated the ovaries as the seat of the hemorrhage, that I had no hesitation in stating such to be the cause of death at the coroner's inquest.—*British Medical Journal, March* 20, 1886, *p.* 539.

92.—ON UTERINE SICKNESS.

By Graily Hewitt, M.D., F.R.C.P., Professor of Obstetric Medicine, University College, London.

It is well known that one of the common symptoms of the presence of pregnancy is nausea or vomiting, which symptoms are invariably ascribed to the changes produced by pregnancy in the uterus, although as to the precise manner in which the gravid uterus acts as the excitor of the sickness, there is no universally accepted explanation. It is generally believed, however, that the sickness is a reflex manifestation of irritation in the uterus.

Further, it is known that, in the non-gravid state, nausea and vomiting are occasionally witnessed in cases where the uterus is in a morbid condition; and the term "uterine sickness" is employed to designate it, implying the admission that the sickness is the result of an irritation in the uterus. Respecting this latter class of cases, however, there is less unanimity in regard to the uterine factor; some authorities entertaining the belief that the sickness depends, in such cases, on an irritation in the ovaries. Further, it is undoubted that an irritation in the ovary may give rise to sickness; and those who would argue for an ovarian source might, with some show of reason, adduce the familiar fact of a blow or injury of the testis producing sickness in the male, as an analogical argument for the presence of ovarian disease as a probable source

of vomiting in the female sex. But, although it is doubtless true that marked sickness may be traced to the ovary, rather than to the uterus, in certain cases, experience strongly favours the view that the uterus is the primary irritating agent in most instances. The presence of sensitiveness to the touch, is one of the tests by which this question would be determined in a given case; for, assuming that this sickness was a reflex sickness, due either to the ovary or the uterus, the presence of tenderness in the ovary, and absence of tenderness in the uterus, would undoubtedly be an argument for the ovarian source of the reflex symptoms, and *vice versâ*. My own experience is, that the reflex symptom now under discussion is almost invariably associated with, and, I believe, dependent upon, abnormal conditions of the uterus, consisting of undue softness, congestion, and alteration of shape—all more or less associated. I have observed the conjunction of these factors, so very common in such cases, as to show, in my opinion, that there is a very decided causal relation between them and the reflex symptom, vomiting; while the evidence obtainable has been, so far as the ovary is concerned, to give a negative to the idea that the sickness was of ovarian origin.

The uterus is not always soft. It presents a condition varying in different cases. When the case is of recent origin, the uterus is commonly soft, and quite wanting in resistance. There is, in most cases, congestion, which is usually of a subacute or of a chronic character; there is sometimes enlargement, when the case has assumed a chronic character, this hypertrophy affecting often the whole organ. The flexion is generally well marked, and of the second or third degree. In some cases, the uterus has become unduly hard; the organ resists an attempt to straighten it, which resistance is due to the hypertrophic hardened state of the uterine walls. Moreover, the uterus, as a whole, is usually less movable than usual, and is altogether nearer the pelvic floor than it should be; indeed, in cases of retroflexion, and in certain cases of anteflexion, it may be found to be separated from the coccyx by hardly more than a quarter of an inch.

I have met with a few instances in which severe vomiting was evidently due to the presence of small fibroid growths in the uterine parietes, and this it is important to bear in mind in attempting any generalisation on the subject; but, in proportion, to the other causes mentioned, this is a cause of severe vomiting which is comparatively rare.

Attentive observation of many of these cases led me to observe the great effect of movements of the body, of exertions, of physical efforts such as would be likely to produce a downward pressure on the uterus, and thus calculated to aggravate, or increase, or produce a physical pushing downwards of the uterine fundus; and when it was found that, almost invariably, the patient suffered from

increase of sickness, in consequence of such exertions or movements, when it was found that increase of such movements did actually produce at one and the same time sickness and increased flexion or displacement of the uterus, it was reasonable to conclude that the increase in the degree of the flexion was an important factor in the production of the sickness.

The most conclusive argument adducible in regard to the action of displacement of the uterus in giving rise to vomiting, is the cessation of the sickness observed to follow the partial or complete restoration of the uterus to a more normal position. In severe cases, the patient would, under such circumstances, usually be made to rest in bed, at the same time that other measures were being taken to give relief by a mechanical treatment of the displaced uterus. Here, it might be fairly urged—and the argument has been freely used—that the rest in the recumbent position is the real healing agent. But there have been many instances which have fallen under my notice, in which the patient, suffering from troublesome nausea, due, as I believed, to a flexion and displacement, has been treated by a suitable pessary, and allowed to go about as usual, and in which, nevertheless, the sickness has forthwith ceased. In these latter cases, in fact, the only remedial measure was mechanical support to the uterus, with complete freedom of locomotion of the body generally, and there could be no other explanation of the result than the one which is here given.—*British Medical Journal, June* 5, 1886, *p.* 1057.

93.—ON CONVULSIONS DURING PREGNANCY TREATED SUCCESSFULLY BY PILOCARPINE—(2ND CASE).

By PETER HORROCKS, M.D., M.R.C.P., Assistant Obstetric Physician to Guy's Hospital, London.

On August 1st, 1885, I was called in consultation with Mr. Ryan (who was acting for Mr. Leftwich, of Newcross) to see a patient in convulsions. She was twenty-three years of age, and single. When fifteen years of age, she was in Guy's Hospital under Dr. Braxton Hicks, and was operated on for an imperforate hymen. Since then she has menstruated regularly until the end of October, 1884, when the menstrual flow ceased. She has had scarlet fever three times; also fits when a child. Has always suffered from pain and "weight" in the head. Twelve months ago she had a fit, during which she was unconscious two or three hours, and was very violent (hysteria?). She is subject to hysterical attacks. On July 29th she noticed that her legs were much swollen; she had a fit on this day, and became unconscious. It was three days later that I saw her, when I found her unconscious and in strong convulsions; face bloated with œdema, and purple from congestion and semi-asphyxia; tongue severely bitten, and bloody foam

issuing from the mouth; abdomen enlarged to the size of a nearly full-time pregnancy. On vaginal examination, which the patient struggled against as though she felt the pain, the os was scarcely at all dilated, but the cervix was softened throughout. The child's head could be felt through the anterior vaginal wall. Her night-dress was wet with urine; skin hot and dry. Fœtal heart sounds heard midway between the umbilicus and the left superior iliac spine. I injected the third of a grain of pilocarpine, and placed her in hot blankets. She had a fit at 6 p.m., and another as they were bringing her up to Guy's in a cab, at 9.30 p.m. On arrival she was still unconscious, and the tongue was more swollen.

At 12.30 a.m., on August 2nd, I saw her again, when vaginal examination was resisted more strongly. The os was dilated to the size of a florin. Temperature 100·2°; pulse 120. Fœtal heart heard again in the same place. One-third of a grain of pilocarpine was injected. This did not cause sweating, and so at 1.15 a fresh solution was obtained, and one-third of a grain was again injected. This acted well, and in a few minutes she began to sweat, and presently was bathed in perspiration.—2.50 a.m.: Can be roused. Does not resist vaginal examination so much. No repetition of fits. Uterus contracting frequently. Cries out sometimes that she has a pain in the back (uterine). Is very restless.—3.45 a.m.: Membranes ruptured spontaneously.—4.15 a.m.: Head nearly touching perineum. Patient speaks rationally, but her tongue is so swollen that it is difficult to make out what she says. Pulse quick.—4.30 a.m.: About four ounces of highly albuminous urine drawn off by catheter.—4.50 a.m.: Child suddenly and rapidly born; quite blue; no effort at respiration; no pulsation in cord; no cardiac beat to be detected. Efforts to induce respiration were of no avail. The child was a small one for full term.—4.55 a.m.: Patient asleep and snoring.—12 noon: Patient rational. She has not the faintest recollection of anything that has occurred since July 29th. Temperature 98·8°. Vaginal douche of carbolic lotion employed. Urine drawn off by catheter; two-thirds albumen; no casts; loaded with urates on cooling.

August 3rd.—During the night she passed urine in bed. Temperature normal. No pain. Takes plenty of milk. Skin moist; tongue very sore; has headache.

4th.—Urine one-third albumen. Temperature 100·4°; headache.

From this time she rapidly got well, and in about ten days was up and about. She left the hospital on August 16th, with some albuminuria and headache. I have seen her several times since; the last time on December 7th, when I examined the urine. It still contained a trace of albumen; no casts; sp. gr. 1015. She felt quite well, and was again at her work. [See also *Synopsis.*]—*Lancet*, *April* 3, 1886, *p.* 635.

94.—ON THE MANAGEMENT OF INCOMPLETE ABORTION.

By Arthur W. Edis, M.D., Obstetric Physician to the Middlesex Hospital; Physician to the Chelsea Hospital for Women.

The subject of incomplete abortion, or imperfect expulsion of the whole of the ovum, cannot fail to prove of interest to all who have to deal with the emergencies of general practice. The risk to the patient, whether from primary hemorrhage or from septicæmia, is often very great; a fatal issue is by no means unfrequent, and even where this does not result, the general health may become seriously affected from the prolonged hemorrhage, septic absorption, or uterine disorder ensuing in consequence. Apart from this, the anxiety experienced by the practitioner—the risk of his reputation suffering, even should he escape prosecution for malpraxis—renders the subject one of unusual importance, and, therefore, well worthy of consideration. The consequences of incomplete abortion are far more serious than at first might be imagined. Many a young life has been prematurely cut short, the hopes of maternity blighted, or prolonged uterine trouble induced, in consequence of an early miscarriage, within a few months of the commencement of married life, not having been properly managed.

It will be beyond the scope of the present communication to allude even to the causation, symptoms, diagnosis, prophylaxis, or treatment of abortion generally. My remarks will be confined solely to the management of incomplete abortion, where the ovisac has ruptured, the embryo been expelled only in part—the placenta, either entire or in fragments, being retained in utero, and giving rise to hemorrhage or septicæmia in consequence.

The principle of early and complete evacuation of the contents of the uterus, where the vitality of the ovum has been destroyed, and abortion is inevitable, although generally accepted by everyone competent to give an opinion, is yet too often neglected in actual practice, and leads to the most calamitous results. The following cases will illustrate this.

M. T., aged 27, single. When first seen in consultation with her medical man, who had only been called in a few days previously, I found her lying in bed, on her back, with the knees drawn up, the abdomen tympanitic, very tender on the least pressure. The pulse was 144, very feeble; temperature 103·2° Fahr. The tongue was thickly coated, red at the edges, and inclined to be dry. She was delirious at times, but could be roused to answer questions. There was persistent fœtid diarrhœa, constant sickness, and much pain complained of all over the abdomen. On vaginal examination, a sanious sanguineous discharge was found exuding from the os uteri, which was somewhat patulous. The uterus was enlarged, fairly mobile, retroverted. Thus far, no history had been obtained explaining her symptoms. Seeing that the patient was in a most

critical condition, evidently suffering from septic peritonitis, I elicited from her paramour that she had had a miscarriage, procured some ten days previously by a midwife. She had missed two periods, and came up to town for the purpose of being set right. Two days afterwards, she had severe pain and profuse hemorrhage, but I could get no well-marked history of any substance having passed. She became very feverish, and was compelled to keep in bed. It was not until nearly a week after this that a medical man was called in, and then he was told nothing beyond that she was losing blood. The patient was too ill to bear much interference. The uterine cavity was thoroughly irrigated with iodised water, quinine and opium administered, and every effort made to rally the patient; but she sank and died within twelve hours of my seeing her.

There can be no question that retained products of conception, decomposing within the uterus, had given rise to septic peritonitis. Had these been removed, and the case properly treated from the outset, the issue would, in all probability, have been different. One can but regret that skilled assistance had not been rendered until the patient's condition precluded any active treatment from being adopted.

In nulliparæ, where, after cessation of the catamenia for one or more periods, and the ordinary signs and symptoms of pregnancy exist, pain and hemorrhage occur, showing abortion to be inevitable, our object should be to favour the expulsion of the ovum with as little delay as possible. The insertion of a carbolised sponge-tent into the cervix uteri, for a few hours, will not only serve to check the hemorrhage, if this be at all profuse, but also to dilate the cervix, and so facilitate the expulsion of the ovum entire. It is in these cases, owing to the undeveloped or undilatable condition of the cervix, more especially where ergot has been too freely administered, that the ovisac becomes ruptured, the embryo expelled, and the chorionic villi or placenta retained.

Mere plugging the vagina with the intention of arresting hemorrhage from the uterus is both unscientific as well as unsatisfactory, and should never be resorted to unless in severe emergencies, where either the practitioner has not the instruments at hand, or does not possess the requisite manipulative skill for passing a sponge-tent into the cervix uteri. In such cases, small pieces of sponge wrung out of iodised or carbolised water, or other antiseptic solution, are preferable to the ordinary cotton-wool or strips of linen usually employed, in that the former tend to expand, and so fill up the vagina when moistened, whereas the latter shrink, and allow the hemorrhage to continue. A vaginal tampon, in any case, should never be left in for more than a few hours without removal.

In the event of a sponge-tent having been inserted into the cervix uteri, and the hemorrhage arrested for the time being, the

question will arise, How long shall this be left in before making efforts to empty the uterus? This will depend somewhat upon the time of the day or night when the practitioner has passed the tent, the amount of hemorrhage which has already occurred, and other considerations. Owing to the extreme nervousness of the patient, her intolerance of any digital interference, the limited capacity of the vagina, or inability to depress the uterus by conjoined manipulation, owing to the patient holding herself so rigidly, the administration of an anæsthetic will generally be found requisite. This should invariably be entrusted to some competent assistant, and not left to the discretion of some unqualified friend or nurse. The operator is thus free to direct his attention solely to the evacuation of the uterus, which must be done systematically and thoroughly, not partially and imperfectly, as this increases the risk of hemorrhage and septicæmia. The time selected, therefore, may be regulated somewhat by the practitioner's convenience; if the tent be inserted late at night, opium may be given to allay pain and secure rest, and the operation fixed for the following morning.

A sponge-tent should never be left in above twelve hours, and when removed, iodised or carbolised water should be freely injected into the vagina before attempting any further manipulation. If the cervix be already sufficiently patulous to admit the finger, or hemorrhage is not an urgent symptom, the insertion into the cervix uteri of a sponge-tent is uncalled for.

Having first seen that the bladder is empty, the patient should be placed close to the edge of the bed, in the dorsal or left lateral decubitus, as may seem most convenient to the individual practitioner. With one hand pressed over the lower abdomen, the fundus uteri is then depressed, so as to enable the forefinger of the other hand to pass entirely into the uterus, when, if possible, the whole of the remaining ovum is swept out of the uterus. If this cannot be accomplished, the portion of placenta within reach must first be detached and removed; the uterus then generally contracts sufficiently to bring the remainder of the placenta within reach, when the finger is again employed to sweep it out, or scrape it off from the uterine wall.

Firm pressure should be employed from above, and the finger should not be withdrawn until the uterus is felt to contract, so as to avoid the formation of clots in the interior.

It is well to inject hot iodised water at 110° or 120° Fahr. through a metal tube or elastic catheter into the uterine cavity, to wash out any placental *débris*, and also to check further hemorrhage, should this be troublesome. A binder should then be applied to the abdomen, as after ordinary labour, ergot administered, and the usual precautions taken to promote convalescence.

In practice, it will, however, often be found difficult, if not impossible, to determine whether the whole of the placenta has

been expelled, and it is in these cases that danger arises, whether from recurrence of hemorrhage, or from symptoms of septic absorption. If any doubt exist, it is better to explore carefully the cavity of the uterus. Denman long ago pointed out the fact that, where any portion of the placenta remains *in utero*, the cervix does not contract thoroughly, but remains more or less patulous. If symptoms of septicæmia have already declared themselves, it may be unwise to insert a sponge-tent. If any difficulty be experienced in passing the finger sufficiently far up into the uterus to allow of placental *débris* being removed, the ovum forceps will here prove of much service. Having inserted them well into the uterus, the handles are separated gently, and any projecting portion of placenta seized and removed, the operation being repeated in a different direction until the whole of the contents have been secured. Where the uterus remains unusually bulky, hemorrhage recurs on the patient rising, or persists unduly long after the supposed miscarriage, or where the lochia are distinctly offensive in character, we may be pretty certain that the uterus is not yet empty. In place of contenting ourselves with the administration of ergot, our plain duty is to explore the cavity of the uterus. Instances have been recorded where portions of placenta have been extracted for many months, and even years, after the miscarriage happened, no effort having been made to remove the cause, the symptom alone being treated.—*British Medical Journal, July* 24, 1886, *p.* 157.

95.—ON ONE OF THE CAUSES OF DIFFICULTY IN TURNING, WITH REMARKS ON THE PRACTICE OF AMPUTATING THE PROCIDENT ARM.

By G. Ernest Herman, M.B.Lond., F.R.C.P., Obstetric Physician to the London Hospital.

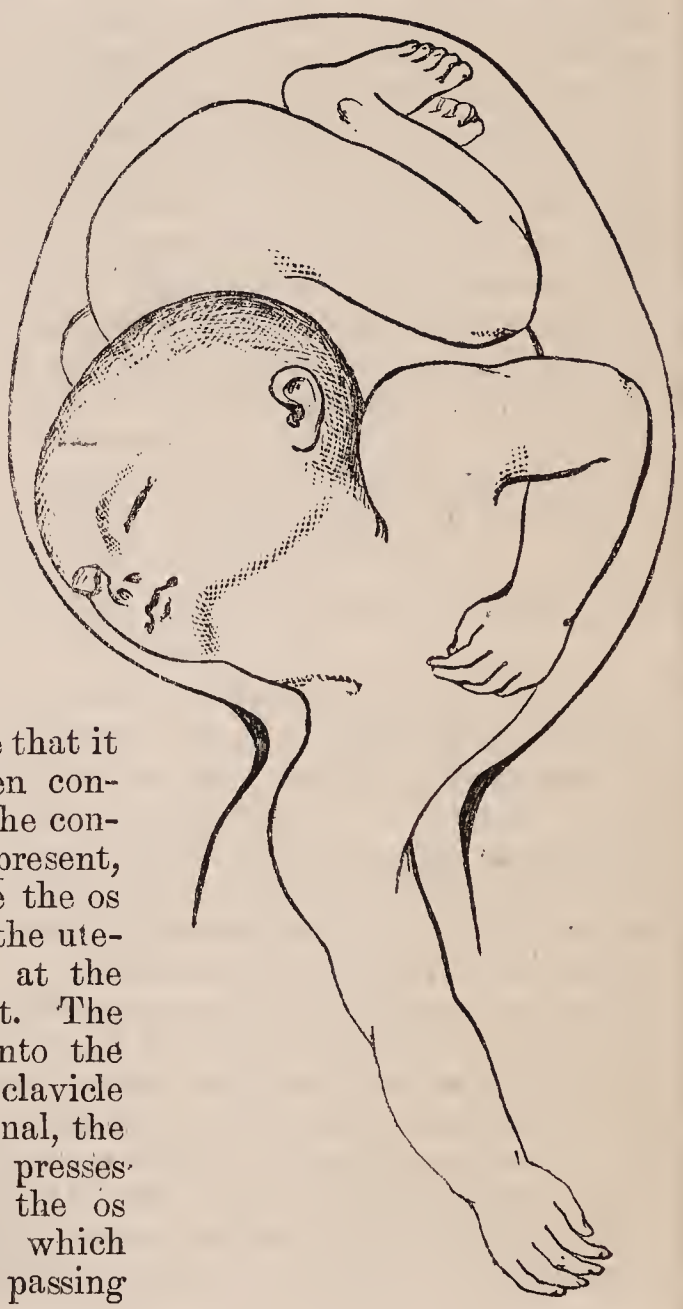
[Dr. Herman narrates three cases in which, when attempting version of the child, he has met with difficulty from the grasping of the scapula of the presenting extremity by the imperfectly dilated *os uteri internum*. These cases the author says are similar in their difficulty to those inwhich the upper extremity has now and again been amputated to facilitate turning. We reproduce here only the first of Dr. Herman's cases, and omit his references to cases in which the arm had been removed.]

Turning in cases of transverse presentation is generally an easy operation; but it is sometimes very difficult. The difficult cases are those in which the liquor amnii has escaped, and the uterus, contracting round the body of the child, has forced the presenting part down into the pelvis. This state of things makes it difficult to pass up the hand and seize the foot, and also difficult to turn the child when the foot has been seized. The well-known method of overcoming the difficulty which is described in every text-book, is

to put a noose round the foot, and by this noose pull at the lower extremity, while at the same time with the hand in the vagina the shoulder is pushed up.

The object of the present communication is to invite attention to certain difficult cases in which even this manœuvre will fail unless the pressure on the shoulder be applied in the proper way. I have not found any published description of this particular variety of difficult version, and therefore make it the subject of a brief note.

In these cases it is moderately easy to seize and bring down a foot. But this being done, and a noose put round the foot and pulled upon, efforts made in the ordinary way, that is, by pressure upwards on the shoulder or thorax, prove unavailing. The obstruction to rotation of the child is the projection of the point of the shoulder below the imperfectly dilated os uteri internum. (I use the term "os uteri internum" in the old and commonly understood sense of a ring of contraction in the uterine canal situated higher up than the os externum.) The os uteri must be nearly fuliy dilated, for without considerable dilatation the shoulder cannot come down; or it may be that it has fully dilated and then contracted again. However the constriction arise, there is present, two or three inches above the os externum, a ring where the uterine canal is smaller than at the parts above and below it. The arm having come down into the vagina, the scapula and clavicle lie across the cervical canal, the point of the shoulder presses against the cervix, and the os internum forms a ring which encircles the shoulder, passing



from the root of the neck round below the scapula (speaking with reference to the fœtus). The arm and scapula are thus below the ring formed by the os internum, which forms a sort of ridge projecting into the hollow between the neck and the point of the shoulder, being above the shoulder, and preventing it from rising when the attempt is made to rotate the child.

Attempts to turn according to the ordinary method make this obstruction to rotation more powerfully operative ; because when the hand is passed up along the abdomen of the child its presence in the limited space of the cervical canal presses the point of the shoulder still more strongly against the cervix, and when pressure is made upwards on the thorax, this jams the point of the shoulder below the projecting ring of the cervix, and efforts at turning are in consequence fruitless.

If the cause of the difficulty is recognised, the method of overcoming it is clear. It is, to raise the shoulder, not by pushing at the side of the chest, but by pressure on the point of the shoulder, so as to move it towards the middle line of the cervical canal.

I have seen three cases in which the condition above described appeared to me to be the cause of difficulty in turning.

The first case was that of a patient of the Royal Maternity Charity. When sent for I happened to be out, and the midwife therefore sent for a neighbouring medical practitioner. He seized and brought down a foot without difficulty, but could not make the child rotate. After prolonged attempts, he sent for another medical man, of very large experience, and the patient being anæsthetised, both legs were brought down ; but still the shoulder could not be moved up. After about three quarters of an hour's endeavour, the operation was desisted from, and I was again sent for. I found that the obstruction was that which I have above described ; that the point of the shoulder was lodged below the projecting ring of the internal os. I pressed the point of the shoulder towards the middle line of the cervical canal, while I pulled on the foot by means of a noose. The shoulder was thus liberated, the child rotated, and delivery was easily effected.

I cannot imagine any way, except by some such mechanism as I have described in the first part of this communication, in which amputation of the arm can affect the ease or difficulty of performing version. If we assume that the obstacle to turning in the cases referred to in the latter part was the projection of the point of the shoulder below the imperfectly dilated internal os, then it is quite easy to understand how the amputation of the arm should free the shoulder and allow the child to be turned.

It is needless to point out the objections to the practice of amputation of the arm if the child be living. If my supposition as to the nature of the difficulty in the cases in which amputation of the arm has rendered turning easy be correct, this operation is

unnecessary, as well as objectionable; for the difficulty can be surmounted in the manner I have pointed out. As a first step to delivery by embryotomy, for which purpose amputation of the arm has been often advocated by the older writers, it is less efficacious than decapitation; and, by depriving the operator of a good hold of the fœtus, makes the subsequent proceedings more difficult.

Notwithstanding that the objections to amputation of the procident arm as a preliminary to turning are so grave that it ought not to be done, yet there is good testimony to show that in some cases it is effectual in rendering turning easy, and I believe that these cases are such as have been described in the first part of this communication.—*Transactions of Obstetrical Society, vol.* xxviii, 1886, *p.* 150.

96.—ON THE TREATMENT OF ENDOMETRITIS.

By Robert Bell, M.D., &c., Physician to the Glasgow Institution for Diseases of Women.

Having briefly passed in review the causation and symptoms of this distressing disease, I will now, in a few words, give my views as to treatment; and first, I would insist that, although general tonic and hygienic measures are essential to promote recovery, they as a rule are useless if employed alone. Local treatment must also be had recourse to, and may be accomplished either by the medical man or by the patient herself. If the case be not far advanced, then rest, with periodic douches of water, at a temperature as hot as the patient can bear them, and continued each time for at least ten minutes, will prove most effective in restoring the health of the parts. These will, if properly conducted, always have a most beneficial effect. At the same time, the patient must be dieted, have her digestive organs attended to, and the bowels carefully regulated.

It would be superfluous, not to say presumptuous, in me to hint at what would constitute constitutional treatment in such cases. I will, therefore, in as few words as possible, detail the local treatment I usually adopt. If there be much hypertrophy and excessive sensitiveness, I content myself with the introduction, twice a week, of a tampon, saturated with glycerine of alum and boracic acid, which I make sufficiently large to act as a support as well as a depleting agent. In a short time, varying from a week to a fortnight, it is generally practicable to commence intra-uterine medication; but sometimes this requires to be done for the first few times while the patient is under chloroform. This consists of an application to the whole endometrium of a saturated solution of iodine in carbolic acid; after which a tampon is introduced, and allowed to remain *in situ* for three days, when it is removed, and another applied for a like period. If there be much depression of

spirits and nervous irritability, I find a pill, containing 2½ grains of valerianate of zinc, and two grains of the extract of conium, administered forenoon and afternoon, of great service. Of course, if a laceration of the cervix exist, this must be at once repaired, or the pendulous portion amputated, after the hypertrophy has been reduced by the local measures indicated. It not unfrequently follows that the presence of a mucous polypus is recognised, when most of the symptoms of endometritis have disappeared. This is, doubtless, a result of the prolonged irritation of the Nabothian follicles or mucous membrane. If such be present, it will prevent a complete restoration of the parts to health, and it frequently accounts for a satisfactory result being difficult to attain. With the removal of the polypus, however, the difficulty will end. It will be necessary to warn the patient against over-exertion of any kind for some time to come, and also to insist that the vaginal douche be employed for some considerable time after she passes from under your care. If rupture of the perinæum exist, it is most desirable that this be repaired, so that due support to the uterus may be given by the vaginal walls. This will not only add to the comfort of your patient, but remove a grave risk of a recurrence of the uterine mischief. Lastly, I come to speak of the treatment when elongation of the cervix exists. Doubtless, local treatment generally is successful in giving relief, but it may be looked upon as almost a certainty, if impregnation do not immediately ensue, that the endometritis will recur. I, therefore, of late years, have always insisted on removing the redundant tissue, an operation which has hitherto invariably been followed by the most satisfactory results.—*British Medical Journal, May* 1, *p.* 820.

97.—ON THE DIAGNOSIS OF INVERSION OF THE UTERUS.

By James H. Aveling, M.D., Senior Physician to the Chelsea Hospital for Women.

The detection of inversion of the uterus is by no means so easy as might be imagined. The occurrence of the displacement is so rare, and the conditions with which it may be compared, and for which it may be mistaken, are so numerous, that the practitioner is very apt to see only what experience has taught him to look for.

The earliest grades of incomplete inversion must be difficult to diagnose. It is, however, stated that a slight depression of the fundus may be felt through the abdominal walls; and this may be possible, if they be thin and yielding. The more certain way of detecting incomplete inversion is by passing the finger in chronic, or the hand in recent, cases into the uterus, and feeling the indented fundus from within. If there be any doubt still left as to the character of the fundal protrusion, a bimanual examination will clear up the doubt.

It is with complete inversion the practitioner has most frequently to deal; and, as the diagnosis of the later grades of incomplete inversion is similar to that of the earlier grades of the complete form, it will be well, in order to prevent repetition, to consider the subject as one.

During recent puerperal inversion, the usual mistakes made are: taking the protruding fundus for the head or breech of the child, a mole, a clot, a polypus, or a placenta. The symptoms are so urgent, and the condition of the patient so critical, that errors are often committed in consequence of the practitioner not giving himself time to determine the exact nature of the presenting body. Hence arise those most distressing cases, in which the inverted uterus is torn away in mistake for something use, and by the act the patient's life and the medical man's reputation are simultaneously destroyed. In recent puerperal cases, the symptoms assist materially in diagnosis. The nervous condition is very marked; shock, pelvic discomfort, and faintness, are observed. Manual examination discovers a large rounded mass in the vagina, which can be pushed up, replaced, and does not fall again, as would be the case with all the other presenting bodies for which it might be mistaken. The fingers passed through the os are also arrested, and no uterine cavity is to be found. The sensibility of the inverted uterus is another valuable diagnostic symptom. In recent cases, the inverted uterus, with a placenta attached (as is usually the case), or a tumour growing from the fundus, has been mistaken for uncomplicated inversion; and I have known a case of inversion, with placenta attached, erroneously pronounced to be a polypus.

The diagnosis of chronic inversion, whether puerperal or non-puerperal, is the same. Involution being complete, a hard, rounded, and smooth body is discovered hanging from the os uteri, which can be traced all round its attachment as a distinct rim. All these characteristics may be found so exactly simulated by a polypus, that the mistake of diagnosing an inverted uterus for a polypoid growth is the one most frequently made. Numerous cases are recorded in which the uterus has been removed in error for a polypus; and a still greater number are related in which the operation has been abandoned in consequence of the pain and shock immediately produced, and which have shown in time the true character of the body about to be removed. In ordinary cases, there is no difficulty in diagnosing between chronic inversion and polypus. The uterine sound can be passed between the polypus and os, until it reaches the fundus, when the organ is found of normal length. A finger passed into the rectum discovers the absence of the uterus from its natural site, and a sound passed into the bladder can be made to touch the finger, positively proving that the uterus is not in its normal position. This is

looked upon as conclusive evidence of inversion; but it is not so, for the uterus may be retroflexed with polypus, and the retroflexion felt by the finger in the rectum may be mistaken for the polypus. Another difficulty is met with when the polypus is attached to, or grows from, nearly the whole circumference of the os uteri. I know a case of this sort which was treated by my sigmoid repositor, I need hardly add without success. Physically, the diagnosis was difficult; for the tumour was continuous with the os, and only a small opening existed in front of the tumour, through which a sound could be passed into the uterine cavity. The tumour was, however, softer and larger than an inverted uterus, and the history of the case pointed distinctly to the conclusion that it was not inversion. The patient was ultimately sent to me that I might try my repositor myself. I removed the tumour, and sent it to the distinguished practitioner who, with two others, had made a wrong diagnosis.

A great difficulty in diagnosis arises when an inverted uterus has a growth in its fundus, and it is difficult to find a line of demarcation between the two. In these cases, the uterus is not of the usual form found when inverted, and the tumour may be so large as to lead the practitioner to believe the whole mass to be new growth, and endeavour to remove it.

One other error is sometimes made. When inversion of the vagina has allowed an inverted uterus to protrude from the vulva, the displacement has been mistaken for prolapsus uteri. The wrong diagnosis is all the more easily committed when the os uteri has become closed, a condition not rare in old women. The forms of an inverted and of a prolapsed uterus are very different. In the former, the greatest diameter is to be found at its distal extremity; in the latter, at its proximal end. The passage of a sound into the bladder will clear up all doubt. In inversion, the instrument will pass up in the normal direction; in prolapsus, it can be made to penetrate the bladder, and pass out of the vulva beside the prolapsed uterus. Even if the inverted uterus be extruded beyond the vulva, it will be found impossible to pass the catheter down to the distal extremity of the prolapsed mass.—*British Medical Journal, March* 13, 1886, *p.* 476.

98.—ON THE TREATMENT OF INVERSION OF THE UTERUS.

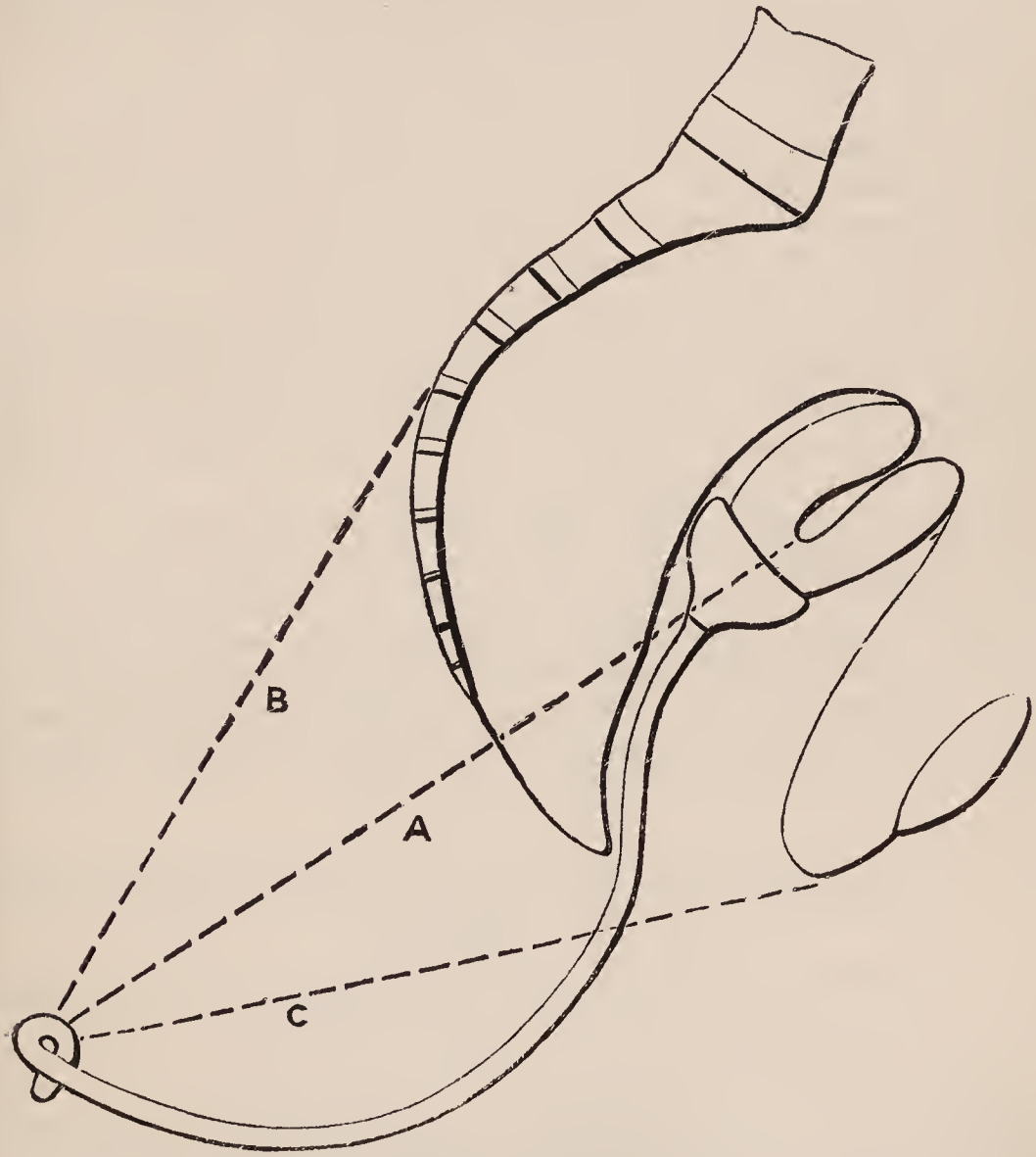
By J. H. Aveling, M.D., Phys. to Chelsea Hospital for Women.

[Dr. Aveling prefaces his remarks upon the use of his Sigmoid Repositor, by reference to other methods of mechanical treatment at one time or another introduced. The author states his belief that every case of inversion can be cured by cervical reposition, he consequently does not take into consideration the palliative and mutilative measures which have been advocated by other gynæcologists.]

Instructions for Using the Sigmoid Repositor.—The first thing to be sure of is, that you have been supplied with a proper sigmoid repositor. Instrument-makers and gynæcologists have their own notions as to what an instrument should be, and have them made accordingly. In one exhibition of instruments, I have seen three different patterns of my polyptrite shown by various makers. The liberty thus taken is most unfair to the inventor, for his reputation rests upon the action of his instrument. If it have been so altered as to become dangerous, he is naturally blamed for having conceived and advised the use of it. I cannot give a better instance of the complaint I am now making, than by referring you to the engravings of my repositor given in the largest and most exhaustive treatise on inversion, recently published by Denucé, of Bordeaux. Without having seen my repositor, he has ventured to give illustrations of it, giving a totally wrong idea of its form and mode of action. A repositor such as he has given as mine could not be worse in shape; for, besides acting in an improper direction, it causes the cup to be applied to the fundus in such a way as to insure its slipping off. Instrument-makers in France are, I have no doubt, making repositors of this pattern, and selling them as mine; for Denucé does me the honour of referring to my "résultats très brillants." Another instance of detrimental change in my repositor occurred in this country. Dr. Bantock had supplied to him, instead of the India-rubber rings which I recommend, India-rubber bands quite unable to exercise sufficient elastic pressure to reinvert a uterus. The first thing, then, is, I repeat, to be sure you have the repositor, rings, and bandages, of the proper pattern.

Having diagnosed inversion, determine by touch the size of the fundus, and select a cup of proportionate size. It should be in diameter slightly less than that of the fundus; next apply the belt round the waist, and then the braces over the shoulders, and fasten them by the safety-pins to the belt. This should be done in such a way as to leave room to pass the tapes, to which the rings are attached, between the pin of the safety-pin and the belt. Now the cup of the repositor should be applied to the fundus uteri, and held firmly in position by an assistant while the rings are adjusted, two being taken in front and two behind (see Fig.). The ends of the tapes should next be passed between the safty-pins and the belt, some of the tape drawn through, and a knot made at its end to prevent it slipping back. Tension may be lastly exerted by drawing the tapes up through the pins, and fastening them at any point by tying a loop. This loop can be easily pulled out and retied, should more or less tension be required. Care must be taken to have the tension equally distributed; for, if the front bands are tighter than the back, there arises the fear of the cup being slipped back off the fundus; and the opposite may occur if the posterior bands be tighter than the front. The India-rubber bands passing

to the front should be carefully laid outside the labia, and packed with cotton-wool. If the patient be restless, or complain of pain, morphine may be administered. She should be carefully watched, and the urine should be drawn by catheter when necessary. It is difficult to lay down any rules for tightening and loosening the tapes. This must be determined by the practitioner, who must judge by the existing tension, and the tolerance of it by the patient. In my last case reinversion was accomplished without the tapes being touched after their first adjustment.



The Sigmoid Repositor applied. A, line of pressure ; B C, traction lines of Elastic Bands.

Reduction takes place by the cervical method. Newnham advised this mode of reinversion in 1818. He said: "It is wisest and best to endeavour to reinvert the uterus by returning first that portion of it which was last expelled from the os uteri." Pressing on the fundus causes counter vaginal traction on the cervix, making

it unroll gradually until the internal os is reached, where a little delay is caused by its being less dilatable. When this point is passed, the body of the uterus soon opens, and admits the cup. The last step must take place rather suddenly, for all patients say they feel that something has "given way," and comparative comfort is the result.

When the inverson has been reduced, the sooner the cup is withdrawn the better, for the cervix immediately begins to close round the rod or stem, and the cup becomes firmly grasped in the uterine cavity. The best way of removing the little cup, is to tilt it on end, and bring it through the os as you would a button through a buttonhole. If it have been long retained, an anæsthetic will assist. It might be a good plan to have a hole made through the edge of the cup, through which a stout string might be passed, by which to make traction. Continuous elastic traction on this string would remove the most firmly-grasped cup with certainty. The stem might be previously unscrewed from the cup.

When the cup has been removed, pass a thick sound into the uterus; and, by pressing the point of it forward, the rounded fundus will be felt through the abdominal walls. Being satisfied that complete reinversion has taken place, syringe out the uterine cavity with iodine water at 120° Fahr., which will cleanse its surface and make the whole organ contract.

I think, gentlemen, after considering these facts, you will come to the conclusion that every case of chronic inversion of the uterus can be cured by sustained elastic pressure exercised in the right direction; and I hope you will not think me too sanguine when I state my belief that the mutilation of a woman, by removing her uterus, will no longer be necessary in consequence of the impossibility of replacing this important organ when inverted.—*British Med. Journal, March* 13, 1886, *p.* 480.

99.—ON A CAUSE OF UTERINE DISPLACEMENT HITHERTO UNMENTIONED, CONTRAINDICATING THE USE OF PESSARIES.

By J. Braxton Hicks, M.D.Lond., F.R.S., F.R.C.P., Consulting Obstetric Physician to Guy's Hospital.

I write subject to correction, but I believe the cause about to be mentioned of uterine displacement and flexion has not been remarked upon, and yet it is not so very rare. Briefly stated, the concavity of the abdominal walls, noticeable in many spare women, will not permit the uterus to take its proper position in the pelvis, but, acting chiefly through the agency of the bladder more or less upon its fundus, pushes this portion back towards the promontory of the sacrum in a much more marked manner than occurs in a normal state, ending in flexion if the uterus be soft and its attach-

ments to the front of the pelvis fairly firm. Again, if the uterus be tied by adhesions, or be already anteverted more than usual, then this condition is still more increased, and the bladder, unable wholly to rise above the uterus, expands by one arm of its Y-shaped cavity in its empty state above it, thus pressing the fundus down, and the other arm distending beneath the uterus tends to increase the anteversion, pushing up the lower end, thus increasing in two ways the anteversion. So that if the catheter be passed the fundus will be found projecting into the back of the bladder and closely opposite to the sphincter, preventing it easily entering, while it readily passes above and below to the full extent, and thus the functions of the bladder are materially interfered with. As most of these cases occur in single women, the uterus is generally held to the public segment of the pelvic floor fairly firmly; but in those who have been delivered the laxity of these front attachments permits the bladder to push the uterus backwards and downwards, so as to bring the back of the uterus in close contact with the anterior wall of the rectum.

In books of anatomy and obstetrics it is stated that the fundus of the uterus reaches to the level of the upper edge of the pubes. This may be taken as generally correct, though from clinical observation I should be inclined to say that it not infrequently rises a little above the plane of the conjugate. The abdominal walls, springing from the edge of the pubes, curve rather forward, and thus do not interfere with the distension of the bladder, at least not to any great extent; nor in the empty state of the bladder with the position of the uterus of normal anteversion; though when the bladder is full it retroposes the uterus towards the sacral promontory. In the condition, however, of the abdomen walls above alluded to, and described in my paper on Abdominal Tension—namely, of extreme retraction—the walls become concave and are in close contact with the brim nearly throughout, in some cases resting nearly closely on the anterior surface of the iliacus and psoas, pressing to a not unimportant extent the viscera, &c. And thus it will readily be understood how that, as the bladder is being distended, unable to rise upwards, it pushes the uterus back to a degree to be measured by the difference of distance between the present incurved line of the inner surface of the walls and their former normal state. The uterus thus in course of time assumes a position with its axis approaching that of the conjugate of the middle of the pelvic cavity, the os in the retroposed position being somewhat apparently elevated, but pointing forwards, except when, to a certain extent, it becomes flexed. There is not much space between the rectum and the back of the uterus, and when fæces accumulate, as they are apt to do in this starved state of the system, they are more or less closely in contact. As I have pointed out, the pressure the walls exert is considerable—some of

it due, as it appears to me, to a kind of permanent contraction of the muscles. This retraction of the walls could not take place without the absence of gas in the intestines; possibly the more solid contact of the inner face of the walls against the firm structures behind sets up a kind of chronic spasmodic state.

I am inclined to think that the uterine dartoid-like attachments are in a state of irritability also. That they are at times capable of this action I have no doubt, and this serves to explain the varying opinions of those who have seen the same case at different times, and it has its parallel in the action of the homologous dartoid tissue which causes retraction of the testicle. That all this can occur without some sort of uneasiness would be wonderful, and this it is which leads the patient to seek medical aid. Generally the patient is of a neurotic temperament, ill nourished, badly feeding, and much complaining; nor is this perhaps to be wondered at, seeing that owing to this incurved state and pressure the abdominal viscera are displaced and interfered with in their movements and functions, thus producing uneasiness, often visible on the face. Accordingly the medical attendant necessarily finds it a difficult task to determine whether the ailment had originated in the uterus, as a cause of reflex bad appetite and nausea, or not. If the pelvic region is much complained of, or if the medical man is over-intent on uterine maladies, he would very possibly be led to examine the uterus, and, finding the organ out of place, might be led to think this the prime cause, and to attempt to correct the displacements by mechanical means. Again, if the digestive organs were most complained of, the cause of the pelvic distress might be overlooked, or attributed to ovarian irritation, or to the constipation, to neuroses, or to fancy. Supposing, then, that in the course of treatment attempts are made by the medical man to correct the position of the uterus by pessaries, the same forces which pushed the uterus into that position he will find now to resist his efforts, and although he may be able to restore the organ in part and get the pessary into place, he will find it will not—as it cannot, indeed—properly act, and that the patient, instead of being relieved, is more uncomfortable.

The same remarks apply to both conditions whether retroversion or anteversion: so long as the abdominal walls remain in the same incurved state above described, it is difficult in most cases to elevate permanently the fundus; indeed, all attempts generally increase the distress, and the uterus shortly regains its former position. In this retracted condition of the walls, the ovaries also along with the uterus suffer from the pressure and restraint of free movement, without which none of the viscera can work painlessly and perfectly; but when pessaries are employed, these are almost certain to be brought in contact with the ovaries, and consequently much distress is felt; and this is naturally most severe when rigid

pessaries are used, such as are made of vulcanite, coralline, or metal—the kinds most likely to be used in these difficult cases. In some of these cases, it is probable that the uterus was already retroposed or anteposed—*i.e.*, before the retracted state of the walls occurred; but the clinical aspect of the case is the same whatever the order of arrival. From a survey of this state of things, I think it will be conceded that the uterus has assumed the position of neutrality to the forces existing about it, and that the treatment should rather be directed to remove these abnormal forces than to drive the uterus in antagonism to them, and thus place it, as it were, between the upper and nether millstone.—*Lancet, March* 20, *p.* 537.

100.—ON VAGINAL HÆMATOMA.

By J. Halliday Croom, M.D., F.R.S.E., Physician to the Royal Maternity Hospital, Edinburgh.

[The author, in an interesting paper, draws attention to the causal relation of anterior displacement of the uterus to the production of Vaginal Hæmatoma during labour. Three illustrative cases are given of which the following are the leading points as abstracted from Dr. Croom's reports. *Case* 1.—Multipara. Membranes ruptured twelve hours; no progress; head at brim and moveable; extreme anteversion of uterus; abdominal bandage applied and full dose of ergot given. Two hours afterwards child born. Next day perineum bulging and vagina filled by a large pyriform mass, base downwards, extending from posterior fornix down to perineum. On the day following rupture of swelling took place into vagina, and venous blood and clots escaped. Discharge continued for fourteen days. Antiseptic irrigation throughout. Recovery in three weeks. *Case* 2.—Multipara. When seen had been in labour ten hours. Membranes ruptured six hours; no progress; head presenting but not engaged; uterus markedly anteverted. Woman placed on back and binder applied. Twenty minutes later distinct bulging in fundus vaginæ in posterior fornix felt. Podalic version. Following day: vagina occluded by swelling. There was no rupture of any part of tumour, and in four or five weeks the patient was well. *Case* 3.—Multipara. Delivered by forceps two or three days previously, owing to delay caused by anteverted uterus. During application of forceps swelling felt in posterior fornix. On third day swelling filled whole vagina. Rupture took place at the junction of vaginal mucous membrane with skin of perineum. Patient had no bad symptoms, and in a few weeks was well. Dr. Croom remarks:]

The rarity of such cases may be gathered from the following statistics, viz.:—Hugenberger, St. Petersburg Hospital, met 11 in 14,000 labours. Deneux saw 3 in forty years. Paul Dubois 1 in 14,000 labours. Vienna Hospital 18 occurred in 33,241 deliveries.

The records show that these extravasations are associated with very considerable danger. Deneux, out of his 60 cases, had a mortality of 11. Probably it is owing to this fact, Deneux being the earliest writer on the subject, that the opinion has gained firm ground that this condition is an extremely dangerous one. Now, this is scarcely the fact, for out of 50 cases collected by Winckel, death occurred only six times; and the three cases which I had just mentioned all recovered perfectly, and one had a normal labour subsequently. No doubt a good deal depends on their extent and situation, but so long as they are confined either to the vulva or vagina, remain of moderate dimensions, and do not begin in or extend to the perimetric tissue, they seem to be less serious than was at one time supposed. My present object is to point out what I believe to be the etiology of this form of vaginal hæmatoma, or, at all events, *one* of the causes. In whatever respect the cases I have recorded may differ, they had the following points in common:—1st. The women were multiparæ. 2nd. The labour was delayed. 3rd. The cause of delay was misdirection of the uterine power from anteversio uteri or pendulous belly. 4th. At the occurrence of the hæmatoma the head was still at the brim.

First, then, there is the common feature of pendulous belly. This, of course, when not associated with narrow brim, as it sometimes is in primipara, means anteversion of the gravid uterus from relaxation of the abdominal walls.

This is a question of degree so slight that the contraction of the uterus may be sufficient to remedy the displacements, or to such a marked degree that the fundus uteri comes to lie on a level lower than the cervix. Fig. 1 shows the varying degrees of pendulous belly, from slight inclination of the fundus forwards to that where the fundus lies on a level lower than the cervix.

Nay, more, cases have even been related where, owing to a split in the recti muscles, the gravid uterus has prolapsed through the aperture and reached almost to the knees, covered only by skin and fascia. In even moderate cases there is a certain amount of flexion as well, the under part of anterior wall of the uterus being bent over the anterior wall of the pelvis, the symphysis pubis acting as a fixed point. In this way tension is made to a very marked degree on the vaginal walls. This tension is produced by two factors. 1st. The tilting forward of the uterus over the symphysis—this, of course, being in direct proportion to the amount of anteversion. 2nd. By the uterine pains. They will, by drawing on the posterior vaginal wall, increase the tension already caused by the altered position of the uterus. It will be apparent, and it s a fact borne out by clinical observation, that the symphysis pubis acting as a fixed point, the greatest tension and stretching will be on the posterior vaginal wall. In an interesting and suggestive paper read to this society some years ago by Dr. Hart on

Rupture of the Vagina, he drew attention to two facts bearing on the present subject. 1st. That vaginal rupture is generally high up on the posterior vaginal wall. 2nd. When it does occur, it is generally transverse. The posterior vaginal wall, especially at its upper part, is, during pregnancy, very thin. This thinning is increased in a normal labour by the uterine action dragging up the cervix and vaginal walls; but in the cases I have just referred to, there is the very great additional stretching induced by the abnormal position of the uterus, and the long-continued ineffectual contraction of the uterine walls. The venous supply to the vaginal wall consists of a lerge plexus of veins, some submucous and some just outside the muscular coat, emptying themselves into the internal iliac. These veins, in common with the other veins in the pelvis, are valveless. In pregnancy these veins, to a greater or less extent, become varicose, owing, no doubt, to the heavy uterus preventing the entrance of the venous blood to the vena cava. So uniformly is this varicosity present, that, under the name of Jacquemier's test, it has come to be recognised among the corroborative signs of pregnancy. Often the venous tissues become so distended with varicose enlargement that they become quite perceptible to finger in the vagina, and can be felt projecting as well-marked cyst-like swellings. Further, it must be borne in mind that, in proportion to the amount of varicosity, so will the wall of the vessel be thin. Hervieux, Laborie, and others are not inclined to believe that varix enters much into the production of these vascular swellings. Perret has collected a series of sanguineous tumours of the vagina, cervix, and vulva, and points out that they occur more frequently by five times in primiparæ than multiparæ, and that they become proportionately rarer according to the number of the pregnancy. Now, in this record Perret mixed up all the varieties. One can easily understand how, under the enormous distending pressure on the cervix and vagina caused by the advancing head, the mucous membrane, carried down by the head, glides over the deeper tissues with a sort of tearing movement. The connecting submucous vessels are torn, blood is extravasated, and small ecchymoses or thrombi are formed. This will to a greater or less extent occur in every labour. But we must not be diverted from the point at issue. The cases I have recorded were all multiparæ, and hemorrhage took place while the head was still at the brim, and while no pressure was being made in the vagina. The mechanism of the production seems to me to be this,—The thin varicose veins on the posterior vaginal wall all undergo stretching along with that structure by the uterine efforts; but, in the cases referred to, the tension is enormously increased by the anteverted position of the uterus; and further, this tension is long maintained by the ineffectual attempts of the uterus to right itself. What occurs is this—during the labour one or more of these vessels give

way under the strain, and rupture, but owing to the tension no hemorrhage takes place. When, however, the case is recognised, and the uterine obliquity overcome, either by position or pressure, or both, the undue tension of the posterior vagina relaxed, the compression of the vessels removed, the hemorrhage slowly and gradually takes place into the connective tissue. In this way it comes about that the rupture of the vessels takes place during the labour, but that the hemorrhage actually occurs only after the displacement of the gravid uterus has been rectified. Into the prognosis, course, symptoms, and risks of these varieties of tumours it would be altogether absurd in me to enter; they are well described in every text-book. My object is simply to draw attention to a hitherto undescribed cause of their production, and, if I may draw a practical lesson, I would add this as one of the risks of labour complicated with a pendulous belly, and an additional reason for recognising and rectifying this form of dystocia early.—*Edinburgh Medical Journal, May* 1886, *p.* 1003.

101.—IMMEDIATE SUTURE IN PERINEAL LACERATIONS.

By William H. Wenning, M.D., Gynæcologist to St. Mary's Hospital, Cincinnati, Ohio.

1. A laceration of the first degree, as long as only the skin is involved, may be left to heal by postural apposition, provided there is no danger of septic infection. If there should be any danger of the latter, although the closing of the wound will not altogether prevent infection by absorption, it will at least lessen this danger, especially with antiseptic treatment.

2. A laceration of the second degree, when the fascia and muscles are torn, ought, if possible, always to be repaired immediately after the occurrence of the laceration, provided there are no complications on the part of the patient, as extensive œdema of the parts, great bruising, &c. In such an event, we cannot expect union by suture immediately; it is therefore necessary to wait a certain length of time, from a few hours to a few days, in order to give the parts a chance to recover their proper vitality and tonicity; or, after having pared the edges, we may introduce the sutures, and gradually tighten them as the swelling subsides. Just here I would direct attention to the tension of the suture. If it be drawn too tight, the vessels may be strangulated, and union may be thus prevented; if, on the other hand, too loose, the surfaces will recede from each other as the swelling subsides, and the stitches will serve to no purpose. Consequently great care must be exercised in the proper tension of the sutures, and if the parts do not look favourable for primary union it is better to wait a few hours, then place the patient under an anæsthetic, pare the edges, and proceed with great care.

3. Lacerations of the third degree produce such a deplorable state of the patient afterward, that every attempt should be made to repair the accident immediately. Even if we should not be wholly successful, we may be so at least partly, by converting a laceration of the third degree into one of the second degree, which is vastly more comfortable than the loss of the sphincter power of the anus. If very urgent reasons should prevent us from attending to this accident immediately after labour, we should at least select the earliest possible time to repair the accident, proceeding with all due care and skill, as in the second operation.

A last word as to the form and method of suture. In the early part of this paper it has been said that the length of the laceration along the external perineum will, as a general thing, be also indicative of the extent upward into the vagina. It will be seen that whilst laceration of the first degree would require but very superficial sutures, those of the second and third degrees must be united by deeper and stronger sutures. If the fascia or tendinous centre of the perineum be torn, the divided edges must also be brought together, which can only be done by deep sutures, the depth been proportionate to the depth of the laceration upward. There can be nothing more reprehensible than the mere cutaneous union of a large and deep laceration. The lower line is truly approximated, but the upper remains open, allowing the fluids to become pocketed, and thus preventing union, and danger of septicæmia. It is better to leave the rent open to allow at least free drainage. If the rectum and vagina be torn a high distance upward, it may become necessary to unite each separately.

For ordinary cases I prefer silk, as it gives less discomfort to the patient, is ready at hand, and more easily introduced. It possesses, however, the disadvantage of becoming septic by the absorption of septic material. This may be overcome by laying the strand first in a solution of carbolic acid or corrosive sublimate, and then keeping up irrigation by an antiseptic solution afterward. Another disadvantage is, that it cannot be tightened, if found after a while too loose. It is, therefore, not adapted for those cases in which there is excessive swelling. Silver wire possesses the great advantage of causing less danger of sepsis, and it may, also, be tightened afterward by simply giving it an additional twist. It is, however, less comfortable to the patient, for the slightest movement on her part will cause the ends to strike some portion of the body in the vicinity of the united edges. As silver wire is, however, stronger, it is better adapted for the cases in which the suture ought to be introduced at a great depth—for example in complete lacerations. If preferred, the wire may also be used for the deep, while the thread is employed for the superficial sutures.—*Medical News, May* 1, 1886, *p.* 486.

102.—ON THE SURGICAL TREATMENT OF FIBRO-MYOMA OF THE UTERUS.

By Thomas Savage, M.D., F.R.C.S., Surgeon to the Birmingham Hospital for Women.

Of the frequency of uterine fibroids there can be little doubt; and, with increasing experience, the cases do not seem to diminish in number, but rather the reverse.

As we all know, very many, the majority, require no surgical treatment at all; they may remain stationary, without producing any symptoms, and no ill result follows; or they increase in size and bleed up to a certain stage, namely, about the menopause. After this period, they often subside with the functional retrogression of the sexual organs; and they may even disappear altogether. I shall not, however, refer further to this class, but to that very important one which demands surgical interference. Here a subdivision can be advantageously made: first, into those tumours which are treated from below, that is, *per vaginam;* and, secondly, those which can best, and perhaps only, be treated from above, that is, by abdominal section.

With the first subdivision of cases, the removal of a polypus by the écraseur is included, as this form of tumour is only an advanced stage of a submucous growth, having become pediculated by a process of squeezing exercised upon it by a contracting uterus. Submucous growths of large size will sometimes burst through their capsule, and be expelled in large masses *per vaginam*. A natural and complete cure is thus effected. I have seen probably half a dozen of such cases. In imitation of this process, art has been able to step in, and, by incising the capsule of the tumour, and perhaps the cervix uteri as well, has given an opportunity and an opening through which the uterus has been enabled to push out the offending mass. This can, in suitable cases, be aided by a process of enucleation. Some years ago, this form of treatment was ably advocated by Dr. Alfred Meadows, the first president of the new British Gynæcological Society. There are, however, some very fatal objections to this course being adopted, except in a very small minority of cases, and those of exceptional suitability. The smallest objection is that such attempts are not always successful; not successful, I mean, in the sense of not attaining the object aimed at; the chief objection is the great fatality that attends the attempts at enucleation. Such is easily understood. Very frequently some form of dilatation of the cervix has to be made, and this, with the hemorrhage or other fluid present, gives rise to a fœtid state of the discharges. If we now make a fresh wound, that is, a perfectly raw surface, we at once open the door for the introduction and absorption of septic matters; in fact, we deliberately inoculate the patient with sepsis.

This is bad enough, and dangerous enough; but if we further make, from time to time, during the progress of the treatment, attempts at enucleation, we make fresh raw surfaces each time, and so intensify the evils.

The treatment of these tumours by abdominal section has, within the last few years, attracted a very great deal of attention, and has been attended with very gratifying results. Two methods are open to the surgeon, each of which is good in suitable cases. I refer to, first, removal of the uterine appendages, and, secondly, to hysterectomy.

When I am asked, before an operation involving abdominal section, what I am going to do? I always say: "I do not know; I propose to make, in the first instance, merely an abdominal section;" and this will most probably result in one of three courses. 1. A simple exploratory operation, where, finding I cannot remove anything, I close the wound again, and the patient is none the worse. This becomes, with increasing experience, of course, less frequent. 2. Removal of the uterine appendages; when practicable, and appearing likely to answer the purpose. 3. Complete removal of the whole mass, or hysterectomy.

Removal of Uterine Appendages.—This operation should be practised whenever it can be done. It would be better to do it when the tumour is very small. The earlier the better; because, at this period in the history of the case, the operation is easier, the appendages being more easily reached; and its object is quite as much, if not more, the prevention of further growth, as the diminution in size of what is already there. At this time, it is an operation almost absolutely devoid of danger and difficulty, and leaves the patient with a very small scar, and perfectly able to enjoy life fully. When it is postponed until the tumour has become very large, difficulties arise. (*a*) The wound has often to be made of considerable size, even to the admitting the whole hand into the abdomen. This, though not adding materially to the danger, has a great influence on the after-comfort of the patient. (*b*) There is increased difficulty of removing the appendages; sometimes amounting to absolute impossibility, on account of their position behind or beneath a large tumour. It is, in this operation, quite essential for success that both ovaries and both tubes should be completely removed. I have myself found that to do it on one side is no good whatever. This experience occurred to me in a large tumour, where I was able to remove the right ovary and tube, but could not possibly get at the left side. The appendages were out of reach—in fact, deep down in the pelvis, beneath the tumour. The tumour continued to grow, and, some months afterwards, I performed hysterectomy, at which I found the left ovary and tube quite buried down in the pelvis. No trace of silk ligature or remnant of tube could be found on the

right side. The rationale of the benefit to be derived from this operation is still a moot point. It would seem to depend on one or both of two causes: either (1) the diminution in the supply of blood, by the ligature of the broad ligament, and division of the spermatic artery; or (2) the suspension of the so-called ovarian influence, on which the functional activity of the uterus is dependent. Perhaps both factors have to do with the result attained, since it is necessary that both the tube and the ovary on each side should be completely removed.

The cases which are most likely to be benefited by this, which may be called the "minor" operation, are those myomata which give rise to hemorrhage.

I have come to the conclusion that, as a general rule of practice, as soon as a myoma has been definitely diagnosed, and is increasing in size, or is causing hemorrhage which is telling upon the health, removal of the appendages is a wise and justifiable proceeding to recommend.

Supra-vaginal Hysterectomy.—This is a much more serious undertaking. Of course it is very radical, and, when successful, there can be no doubt about the cure. I just now alluded to what I consider justifies the operation of removal of the appendages. I feel that very much more must be present before the surgeon could advise this much graver proceeding of hysterectomy. Subject to some modifications, I would say, if a patient under 40 or over 45 have a fibroid which is gradually though slowly (*a fortiori* quickly) increasing in size, giving rise to hemorrhage, which tells on the health and strength, so that she is unable to do her duties in the world, causing pains which, as is sometimes the case, unfit her for her duties, or, by its increasing size, is beginning to exert injurious pressure on surrounding parts, as the rectum and bladder (the latter most frequently), that we are justified, in the presence of one or more of these disturbances to health, in recommending her to submit to an operation which will probably eventuate in the removal of the whole mass.

In reference to the operation, the first parts are similar in detail to ovariotomy. The incision has to be much longer, on account of the solid character of the tumour. A corkscrew, to pierce and drag out the tumour, is a great aid, and helps to minimise the length of the cut. As a rule, adhesions are not likely to be present, because there is not the same tendency to attacks of localised peritonitis, there being no abnormal fluid in close contiguity, as in many cystomata. I always pass a thick silk suture at the lower portion of the wound below the stump, and another immediately above the stump, so as to have these two sutures closely embracing the stump. It prevents the possibility of fluid running down the side of the stump, and effectually shuts off the peritoneal cavity. This is one of several details, the

importance of attention to which I would accentuate, if success is to be attained. Another is the keeping of a sponge in the abdomen between the uterus and bladder; here fluid and blood may, during the operation, collect unobserved, and play hereafter an important part in an untoward result. Sponging out the cavity of the pelvis and abdomen, even though no fluid may appear to have collected, is important; and I now also frequently use a drainage-tube in addition. The arrangement of the stump with a clamp and pin is a matter that requires some little care and nicety, so that the wire-enclosed stump may lie comfortably in the lower angle of the wound. It is very necessary to attend to the proper tightening of the wire. If it be not tight enough, hemorrhage will ensue after a time from a gradual shrinking of the stump; this, if the surgeon be at hand, is easily controlled by a half or a complete turn of the screw. I recently lost a case on the seventh day from this cause. If the wire be too tight, it is apt to cause very rapid destruction of the distal end of the stump, with too early separation of the slough. When this occurs, the proximal end of the stump sags down into the pelvis; the more readily, if the abdominal wall be thick or the tension great. At the end of four days, at which period I have known the clamp to separate, the exudation and lymph round the stump, which shuts off the peritoneal cavity, must, of necessity, be slight, and capable of being easily broken down; when, if such should occur from the efforts of coughing, straining, &c., the whole abdominal cavity is laid open, with intestine protruding, and the putrid stump at the bottom. This dangerous state has occurred twice to me. One of the patients died in consequence; the other recovered. One advantage of this particular kind of clamp is that we can regulate the tightness of the wire, which is soft and pliable; and we also have so admirable a command over hemorrhage, if it have not been screwed tight enough.

Of late, I have been in the habit of using the drainage-tube more frequently than I used to do, and much more, I know, than many operators. I do it for the sake of security. I am astonished at the very large amount of blood and serum which may be drawn off after the removal of fibroids. Of course, it is readily understood that, at first, after the sudden removal of a large solid mass, a considerable disturbance has arisen in the balance of the local circulation in the pelvis, and that a condition of stasis is relieved by osmosis. In a recent case, the amount of fluid was very considerable, and there were next day two or three fairly large blood-clots; although I am quite sure that, on closing the wound, I left nothing behind either of blood or serum. I am at present inclined to drain every case, even though the cavity is considered to have been sponged perfectly dry; and this, on account of the excessive sanguineous oozing noticed in so many instances. Perhaps one reason for this large quantity of bloody serum may be that the

careful sponging has wiped off the endothelium from the serous surface of the visceral and parietal peritoneum. I have recently used drainage-tubes longer than those generally sold, and think that an advantage is gained by knowing that the tube is long enough to go down into the most dependent part of the pelvis, where fluid would be sure to collect. When I have lost a case after drainage, I have always felt that it was most probably because the tube was not quite efficient. I have had some made in Birmingham 8 inches long, and they appear to be long enough to reach through the deepest pelvis and thickest abdominal wall to the most dependent spot. I sometimes insert the tube through the upper portion of the wound, instead of near to the stump. This I do to prevent any interference with the early and sound healing of that portion of the wound which is near the stump; and also that the track of the tube and the hole left by the removed clamp may not be in danger of coalescing. The hole left behind, soon after the clamp has come away, is wide and deep, a sort of bottomless pit, dreadful to look into and contemplate. You see putridity at the bottom, and know that the sides consist of only a few granulations, which intervene between life and almost certain death. To prevent the sagging down into the pelvis too soon, I have several times passed the suture which is immediately above the stump through a small portion of the uterus itself, just below the wire. This detail also helps in shutting off the peritoneal cavity. I noticed recently that Dr. Bantock has been doing the same thing.

Although the results of hysterectomy have improved in the last few years, very much in the same way as ovariotomy improved after it was taken up and carried out in a scientific manner, yet it does not seem likely that it will ever stand on an equality in its results with ovariotomy. There are many circumstances connected with the nature of the case, and with the operation itself, that tend to cause a larger mortality. The best treatment of the pedicle or stump, now quite settled for ovariotomy, is still a matter for consideration in hysterectomy. For a few years, when the ovarian clamp was discarded, it was thought best to treat the uterine stump by ligature, and drop it in. Success did not follow this practice, as in the sister operation; and, of late, recourse has again been had to the clamp, or extraperitoneal plan. Theoretically, the intraperitoneal method appears the most scientific, and various devices have been adopted to ensure its success: namely, tying the stump in segments by a number of ligatures; sewing the peritoneal edges together over the stump, so as to form a cap or covering over the raw surface; this is aided again by taking out a wedge-shaped piece from the stump on the distal side of the ligature, by the application of the actual cautery, and also by tying the vessels in the stump separately. Hemorrhage has proved a formidable danger in many instances, whether intra- or extra-

peritoneal. The chief objections to the extra-peritoneal method are the greater liability to septic absorption, hemorrhage, the too early separation of the clamp, and the much greater delay in the healing of the wound and subsequent convalescence. This latter objection, though not so important as the former ones, is yet a factor in the consideration.

As regards the causes of death, putting aside such unforeseen accidents as tetanus, hemorrhage, too early separation of clamp, &c., I think nearly all the deaths will be found to be due to septicæmia in one of its many manifestations. The symptoms which are most prominent in individual cases vary exceedingly. In one patient, as Dr. Keith recently remarked, death seemed to commence immediately from the operation, and to go on uninterruptedly. I call to mind two cases as illustrating the inequality or irregularity of the symptoms.

Case 1.—Mrs. D. lived five days. The pulse and temperature were normal till a few hours before death. She had incessant vomiting and suspension of flatus from the time of operation. She was sure, almost to the last, that she was going on well "but for the sickness."

Case 2.—Miss H. had no vomiting, and flatus passed freely; but distension came on in forty-eight hours, with raised temperature and rapid pulse.

I think we shall, ere long, forego using the term "surgical fever," and apply to the condition long known under that head the name of septic fever, or some such word, having a precise pathological meaning. That there need be no pyrexia or fever after a surgical operation is often seen by all; I had an illustration of it last week. I removed a large myoma by hysterectomy, including the uterus, ovaries, and tubes. The patient has not had a symptom to cause the slightest anxiety, and her pulse and temperature have not once touched 100. Here was a case of sufficient magnitude to have caused considerable "surgical" fever; but as there was no septicæmia throughout, so there was no fever.——*British Medical Journal, March* 13, 1886, *p.* 486.

103.—ON A CASE OF PARTIAL HYSTERECTOMY FOR FIBRO-MYOMA.

By James Braithwaite, M.D.Lond., Obstetric Physician to the Leeds General Infirmary.

In a case of large and rapidly-growing fibroid uterus, attended with such hemorrhage as to endanger life, only two courses are open, if the patient is not to be left to her fate, viz.: (1) to remove the uterine appendages, or (2) to remove the uterus as a whole, except the cervix, which forms the pedicle. I believe, however, that it has never hitherto been pointed out that if neither of these plans

is available there is still open a third mode of operating, one which may at first sight appear to be, and possibly is, more hazardous than either, and which, nevertheless, avoids the principal dangers peculiar respectively to either oöphorectomy or hysterectomy as ordinarily performed. Apart from septicæmia, the principal danger of removal of the uterine appendages (for oöphorectomy, strictly speaking, is not the operation proper to these cases) is secondary hemorrhage. One main source of danger in hysterectomy arises from retraction of the pedicle. Both these dangers were avoided by the mode of operating adopted in the following case—*how*, I will explain in its relation.

I will not go through the details of the history and diagnosis of the case, but will state briefly that the uterus was a mass of fibroids, reaching nearly to the under surface of the liver. It was still growing, although the patient was forty-nine years of age, and she was drained by hemorrhage and wearied with constant pain. On January 26th last I made an exploratory incision with the view of seeing whether removal cf the tumour were possible, or, if not, with the object of removing the uterine appendages. Mr. McGill and Mr. Robson of Leeds, and Drs. Black and Lever of Harrogate, were present. After making the abdominal wall incision, it was found that hysterectomy as ordinarily performed was impracticable, because there was no narrow part to form a pedicle, for the cervix was distended with fibroid growths to a large size, and it was impossible to raise the uterus upwards from the pelvis owing to its being held down by thick and firm but short broad ligaments. On the other hand, removal of the uterine appendages, though easy on the right side—and, indeed, I did remove a large hydro-salpinx—on the left side would have been extremely hazardous, as the ovary was embedded in the side of the tumour, had no pedicle, and was entirely covered with large thin-walled veins. Thinking it better for the patient to die a natural death than from intra-peritoneal hemorrhage within twenty-four hours, and death from natural causes appearing less probable than death from the operation, if proceeded with, I returned the tumour into the body, intending to close the wound. At this point my colleagues and friends forsook me, thinking all was over. As soon, however, as the tumour was replaced, blood welled up in large quantity, and its source could not be discovered; the tumour was therefore again raised and examined, as it was more than once, because the hemorrhage ceased when the tumour was raised. The ligature was safely on the place whence the tube had been removed, and the bleeding did not come from this source. I therefore for a moment found myself in a difficulty from which no means of extrication could be seen. Not attempting any traction, I simply flexed the uterus forwards out of the wound, applied a Lawson Tait's clamp wire, and removed it by cutting through the body at

a spot which seemed the most favourable, and where it was about four inches in diameter. When the clamp was tightened up this was reduced to a diameter of about two inches and a half. On bringing the wound together round the pedicle, it rested on all sides upon the mass beneath, which was as large as a uterus at five months' gestation. By weight, I suppose that two-thirds of the tumour would be removed, and one-third left behind. The uterine cavity was cut through in removing the tumour, and of course both ovaries went with it. Hemorrhage from the stump occurred several times, but it was controlled, and the patient made an excellent recovery, thanks in great measure to the assiduous care of the resident obstetric officer to the infirmary, Mr. Croft.

It seemed to me that the successful issue of this case depended a great deal upon what might be considered the very fault of the operation—viz., the large size of the mass left behind. As stated, the edges of the wound rested upon this mass all round and adhered to it, so shutting off the peritoneal cavity. For the same reason there was no traction upon the pedicle—indeed, it never retracted, it was too large, and consequently all danger from this source was avoided. The mass left behind did no harm; it ceased to grow, and to some extent has shrunk. It now forms part of the abdominal wall, and has upon its surface a small fibroid, which has appeared since the operation, although the base from which it grows is smaller.—*Lancet, July* 17, 1886, p. 118.

104.—ON SUPRA-VAGINAL AMPUTATION OF THE UTERUS.

By Frederick Lange, M.D., New York.

[Dr. Lange contributes a paper consisting largely of important clinical observations upon the course and treatment of large uterine fibromata. Three cases in which very large tumours underwent spontaneous sloughing or suppuration, with a successful issue, are first narrated, and the author points out that though many cases recover in this way, we are in no way justified in trusting to such an exceptional and unreliable course of the disease so far as to give any important weight in regard to our prognosis in cases of uterine fibroids, the great majority of cases urgently calling for active surgical interference of some kind. Dr. Lange has but a small experience of removal of the uterine appendages, and speaks in doubtful terms of its applicability in cases of very large growths. Two cases of successful supra-vaginal hysterectomy are next narrated, and then the writer addresses himself more directly to the most important point in the operation, viz.:—the treatment of the uterine stump.]

With reference to the supra-vaginal amputation of the uterus, I should like to mention, in a few words, the different ways in which the uterine stump is secured and treated. Thus, as previously in

ovariotomy, the extra- and intra-peritoneal method stand against each other, and on both sides equally good results are obtained. Schröder and Martin, in their very extensive practice, trust to tight suture of the stump after funnel-like excision. Schröder first advised étage suture. They do not use the permanent elastic ligature, and are strong advocates of the intraperitoneal treatment. So is Olshausen, who uses the elastic ligature, Rose, and others; while extraperitoneal treatment is given preference by Hegar, Kaltenbach, Péan, and others, as involving less risk in reference to septic poisoning, and leaving the stump accessible in case of secondary hemorrhage.

There exists, perhaps, no more striking illustration of the safety of aseptic proceeding than the fact that such large masses of tissue or the ligated stump of the fibromyomatous uterus can be left in the abdominal cavity, deprived of blood supply, without undergoing decomposition, and giving rise to infection. On the other hand, it cannot be doubted that a certain amount of risk will always be attached to their way of acting, and that those methods which secure nutrition to the stump with intraperitoneal treatment will have to be regarded as the most proper ones. That good results can be achieved by the extraperitoneal method nobody will doubt, and repeatedly successful cases of it have been reported. I am, however, convinced that, by-and-by, just as it has been with ovariotomy, the intraperitoneal treatment will be more and more adopted. I should certainly give preference to Schröder's method of securing the stump by tight étage sutures, above all others, if with reference to hemorrhage I should regard it as free from all danger. It may be safer in the hands of operators, who are working on such a large scale as Schröder and Martin do. I must myself concede, that heretofore only the apprehension of a possible hemorrhage has prevented me from following them. In order to combine the advantages which the elastic ligature offers in regard to hemorrhage, with those offered by suturing the stump, I have tried, in one of the above cases, to apply the ligature beneath the peritoneum, so that a certain amount of blood can be furnished to the stump through its peritoneal covering, which, of course, must be detached as little as possible above the ligature. Further observations will have to be made, in order to ascertain whether this procedure will always yield as good results as it has in my case as above recorded.

One mechanical contrivance I would mention, and of which I like to make use in all abdominal operations wherever practicable, is Thiersch's ligature spindles, with or without holder, which I have presented at a former meeting of this Society. They are, indeed, very handy, and allow of securing pedicles and fleshy adhesions with more constricting force, than can be exerted in the ordinary way of tying.

The abdominal incision ought to be long enough to allow of an easy access to the operating field. I certainly prefer too large an incision, to one which obliges the operator to work in the dark, or to do uncertain manipulation. For this latter reason, often one of the principal dangers in these operations is incurred, namely, unnecessary and abundant loss of blood, simply because the operator does not in time and with easiness get at the bleeding point. If one has seen those enormously dilated veins in these tumours, one must be convinced that bleeding from such a vessel for a very short time must be sufficient to endanger life. For this reason, also, every undue tearing force ought to be avoided, and it is safer and more wise to work slowly and cautiously, than to hurry at unnecessary hazard. The length of the abdominal incision adds almost nothing to the danger and gravity of the operation, and incisions of fifteen or more inches will heal without difficulty. To obviate loss of warmth from extensive denudation of intestine, the use of large, flat sponges dipped in a weak aseptic fluid seems to me the most commendable. —*Medical News, June* 12, 1886, *p.* 654.

105.—ON THE DIFFERENTIAL DIAGNOSIS OF DISTENSION OF THE FALLOPIAN TUBES.

By John W. Taylor, F.R.C.S., Out-Patient Surgeon to the Birmingham and Midland Hospital for Women.

[Dr. Horrocks's paper referred to by Mr. Taylor appears in the British Medical Journal for March 27, 1886, and seems to have been written in reply to some questions raised by Mr. Taylor upon a case published by Dr. Horrocks in the same journal of March 6th.]

The title of Dr. Horrocks's paper, "A Pelvic Tumour," seemed to invite friendly suggestion or criticism. But the further consideration of a particular case, the exact nature of which may probably never admit of absolute proof, will be unprofitable; while the broad question of the differential diagnosis of a distended Fallopian tube from uterine myoma is an important one, and its discussion may be eminently profitable. And because I do not quite agree with Dr. Horrocks in the leading features of this differential diagnosis, I desire to point out what, in my experience, are the chief marks of similarity and difference between the two diseases.

1. Menorrhagia may be common to both diseases; but in uterine myoma it is painless, in tubal disease it is very painful.

2. Moderate enlargement of the uterus (from 3 to $3\frac{1}{2}$ inches) is present in tubal distension accompanied by hemorrhage (as in most cases where metrorrhagia is a prominent symptom); an enlargement beyond this may generally be expected in myoma.

3. The tumour formed by distension of the Fallopian tube is always single or double, and is always posterior to the uterus; nodular myoma is usually multiple, and the situation of the outgrowths variable.

4. The tumour formed by a distended tube, even when chronic and quiescent, is always very tender to touch, whether that touch be from the examining finger of the surgeon, or from the passage of scybala through the rectum; a myomatous nodule, unless inflamed, is comparatively insensitive. Probably, for a similar reason, dyspareunia is a very general symptom of tubal disease, but is almost unknown in myoma.

5. The outline or shape of a distended tube is fairly constant, in possessing a longer and a shorter axis; that of nodular myoma is round or quite irregular.

6. The tumour caused by a a distended tube varies in its firmness or consistency, and at some time or other will show signs of elasticity or fluctuation; that of nodular myoma remains hard.

7. Both a distended tube and myoma of the posterior uterine wall may sink lower in the pelvis by causing retroflexion of the uterus; but, apart from this, the former, although adherent, tends to sink slowly by its own weight; the latter reaches a lower point only by increased growth.

8. When pregnancy occurs, the uterine enlargement being caused chiefly by the development of the muscular tissue of the uterus, a myoma of this tissue will be much more likely to be raised by the growing uterus than a distended tube, which is only adherent, and often but lightly, to its peritoneal investment.

In the case referred to in my paper of March 20th, the tube has remained in its original position during the progress of the pregnancy.

The only other condition that is likely to be confounded with distension of the Fallopian tube is cyst or abscess of the ovary. A special form of cystic disease of the ovary is often, perhaps generally, combined with occlusion and distension of the tubes; and if the latter be correctly diagnosed in these cases, this is sufficient for every practical purpose. But ovarian abscess or cystoma of the ovary in an early stage, the associated tube remaining normal, needs rather careful differential diagnosis from a distended tube. I have found the chief point of difference to be this: that, in cyst or abscess of the ovary, a space can be found between the tumour and the uterus unoccupied by any swelling; in distension of the Fallopian tube, the tumour is continuous with the uterus. By this means I have on two or three occasions diagnosed a cystic condition of the ovary only, when tubal disease has been expected; a diagnosis which has been confirmed by operation.—*British Medical Journal, April* 17, 1886, *p.* 737.

106.—ON EXCISION OF THE ENTIRE UTERUS FOR CANCER.

By Charles E. Jennings, F.R.C.S., M.S., Assistant Surgeon to the Cancer and North-west London Hospitals.

[After fully narrating a case in which he successfully removed a cancerous uterus by the vaginal method, Mr. Jennings gives the following review of the history of the operation, and then makes some important observations on the method to be followed, chiefly deduced from observations upon the dead body.]

Dr. Wallace relates four cases of uterine excision. The first two were vaginal hysterectomies for early cancer, and both patients recovered. The last two were for advanced cancer; one operation was performed by the vaginal, the other by the abdominal, method, and both patients died. With regard to partial excision of the uterus, Dr. Wallace condemns the use of the écraseur, as liable to be followed by hemorrhage, and as dangerous to the peritoneum and adjacent organs; he also cites a case where it was followed by fatal shock, and therefore he discards the écraseur for amputation. For partial excision Dr. Wallace recommends anterior and posterior semilunar vaginal incisions. The uterine arteries and lower parts of the broad ligaments are to be ligatured at a distance of half an inch from the ureters, and the broad ligaments divided between the ligatures and the uterus. The cervix is to be dragged upon forcibly, and severed as high up as possible with scissors. The stump and flaps are to be washed with iodised water, the vaginal flaps being closed with sutures passed through the stump. Where difficulty is experienced in ligaturing the uterine vessels, Sir Spencer Wells's pressure-forceps are to be applied and left *in situ* for thirty-six or forty-eight hours. This operation is only to be advised for very early cancer.

Dr. Carl Schroeder considers it always possible to extirpate the entire uterus, even if wholly diseased. The adjacent parts of the vagina can also be removed, but this author questions the advisability of operating in such cases on account of probable recurrence. Where cancer of the cervical mucous membrane and of the body of the uterus exists, there is always necessity for total extirpation. For extirpation of the uterus, Schroeder advises a circular vaginal incision to be made near the cervix, and Douglas's space to be opened. The fundus uteri (retroflexed) is to be drawn down with a volsellum. The broad ligaments are to be ligatured either singly or in separate portions. Whilst removing the uterus a great deal of tissue is to be left between the ligatures and the organ, otherwise the ligatures will slip. The wound in the peritoneum is to be closed, stitching the pedicles into the angles of the wound. A T-shaped drainage-tube is to be inserted and the end wrapped round with salicylated cotton, which must be renewed as often as it is soaked. The stitches are to be removed in fourteen days.

Above all, the uterus must be well drawn down during the operation, a proceeding very difficult where the vagina is narrow and the uterus very much enlarged. Schroeder had seven deaths out of twenty-three cases of vaginal extirpation of the uterus. In his hands supra-vaginal excision gave a death-rate of eight out of sixty-four cases, but recurrence generally took place in those who survived the operation.

Professor Olshausen, in a letter to Sir Spencer Wells, recommended the employment of the elastic ligature for ligaturing the broad ligaments at a late stage of the operation. He employs a drainage-tube and iodoform gauze. The elastic ligatures are allowed to remain *in situ* for two or three weeks. Altogether Olshausen performed twenty-eight operations in two years and a half, three of which were supra-vaginal excisions; of these, all the patients recovered but one with a vesico-vaginal fistula. Out of the twenty-five cases of complete extirpation there were seven deaths—two on the day of operation, three of septicæmia on the second and third days, one of carbolic acid poisoning on the second day, and one of iodoform poisoning on the sixth day. Referring, however, to the last edition of Sir Spencer Wells's work, it appears that up to the end of 1884, Olshausen had thirty-four cases of complete vaginal extirpation, with seven deaths. Since there were seven deaths in the first twenty-five cases, it follows that the last nine operations must have been performed without a death, a circumstance which supports the view that diminishing mortality will accompany increasing operative experience of uterine excision. "Among the cases where there had been no reappearance of disease, two years had elapsed in two cases, in one case two years and a half, and in two cases three years; but in a larger proportion there has been reappearance in between one and two years." Olshausen emphasises the fact that the special danger of the operation is injury to the ureters, which appear to have escaped by stripping them up, together with the loose cellular tissue which surrounds the supra-vaginal portion, by means of the fingers.

On the other hand, a case is recorded in which M. Jules Boeckel of Strasburg, *dissected out* the tissues between the uterus and bladder. A urinary fistula from injury to a ureter resulted, for which nephrectomy was performed, and the kidney removed was a healthy one. The patient recovered, left the hospital within six weeks of the first operation, and remained healthy, with the exception of polyuria, passing 1800 grammes of urine daily. She died in the seventh month, and a necropsy disclosed cancerous degeneration of the abdominal glands and parenchymatous inflammation of the remaining kidney.

A case is reported by Dr. Hennig (Leipsig) where the patient had survived vaginal extirpation eight months at the time of communication. There was then no recurrence. The steps of this

operation were—(1) anterior vaginal incision; (2) separation by the fingers of the anterior fold of the peritoneum; (3) anteversion of the uterus and enucleation of the organ; (4) removal of a cancerous nodule from the rectum. The wound in the rectum was closed by sutures. The entire length of the uterus was five inches and a half, and the cervix was entirely invaded by the neoplasm. The left ovary and Fallopian tube were removed, also half the right Fallopian tube. Enucleation, without opening the peritoneum, had been intended, but had not succeeded. Considerable peritonitis followed, but little hemorrhage. A recto-vaginal fistula resulted, which was operated upon four weeks later. Four months afterwards a small recurrent nodule, which had arisen near the site of the fistula, was excised. There was no further recurrence.

Uterine excision by separation of the peritoneum was first proposed and successfully performed by Langenbeck. The woman survived the operation twenty-six years, but the uterus was not cancerous.

Dr. Gusserow, one of the latest writers on uterine extirpation, has collected 253 cases (where the operation was performed by the vaginal method), with a mortality of 23·3 per cent., the list including operations from the time of Sauter (1822), Blundell (1828), and Récamier (1829).

Pfannestiel collects 154 operations up to 1882, with a mortality of 23 per cent.; but after 1882, thirty-six cases, with a mortality of only 8·3 per cent.

Gusserow advises the use of the curette and cautery as preliminary to making the vaginal and peritoneal incisions, so that when the uterus is retroflexed the chance of auto-infection from the cancerous cervix will not exist. He considers flexion of the organ to be recommended as tending to check hemorrhage by torsion.

These various modifications of the operation have been detailed because a study of the differences of procedure which they present may serve to afford the basis of a definite plan of operating, which may probably afford greater successes than those which have been devised in the past, and to further this object I have recently practised uterine extirpation upon the dead body, which enables me to submit the following points for consideration:—

1. There may be two semilunar vaginal incisions or one circular one. If the circular incision be chosen, the divided vaginal arteries can be readily secured by hæmostatic forceps. Before the incision is made the cervix should be well drawn down, thoroughly exposed, and the finger passed along the line of the proposed section, which should be principally made with blunt-pointed scissors, or a probe-pointed bistoury. The bladder should be supported with a staff throughout the operation.

2. The ureters are to be separated from the sides of the uterus with the fingers, and the peritoneum stripped upwards over the

organ as high as possible, so that after its removal a funnel-shaped peritoneal flap will remain.

3. The uterine arteries should be secured prior to division.

4. The uterus should not be flexed, since such a course involves greater difficulty in dealing with the broad ligaments, and might add to the risk of sepsis from the cancerous cervix.

5. The broad ligaments are to be secured as follows:—The peritoneal cavity having been freely opened in front of and behind the uterus, by tearing through the peritoneum with the finger-nails, the operator's left hand is to be introduced into Douglas's pouch, and the uterus pushed upwards towards the abdominal cavity in order to gain space (Fig. 1). A loop of stout carbolised silk must be passed upwards in front of the uterus, by means of a staff shaped like a vesical sound, having a notch for the silk at the top of its beak. This loop can be caught by the tips of the left index and middle fingers at the summit of the uterus, and one end

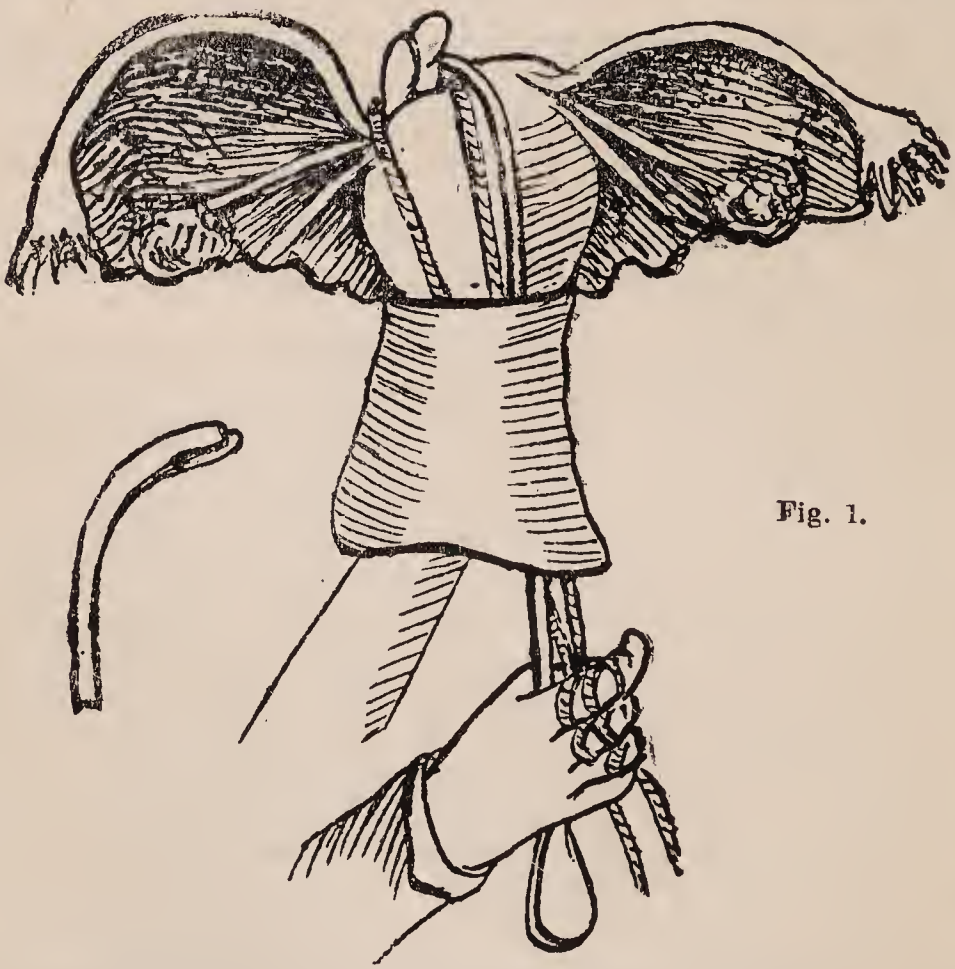


Fig. 1.

drawn downwards. By a similar manœuvre a second loop can be passed over the other broad ligament (Fig. 2). Perforated shot are to be slipped upwards, each embracing a ligature, and clamped by pressure with a forceps such as that shown in the engraving, firm traction having been previously made upon the ligatures. The broad ligaments are secured close to the uterus.

6. Two courses are now open to the surgeon. By the first, a stout pair of Wells's pressure-forceps is applied to each broad ligament external to the silk ligatures, and the uterus then excised with scissors. In this case the silk ligatures will have served the purpose of temporarily compressing the broad ligaments and of depressing them into the jaws of the pressure-forceps. The forceps will be allowed to remain *in situ* for some hours in order to prevent hemorrhage, and the operation completed as in the case of Mrs. R——. By the second course, double ligatures must be applied to the alæ vespertilionis, and these structures divided on either side between the double ligatures. The operation will then be completed by closing the peritoneal cavity, after the manner ordinarily adopted in abdominal operations.

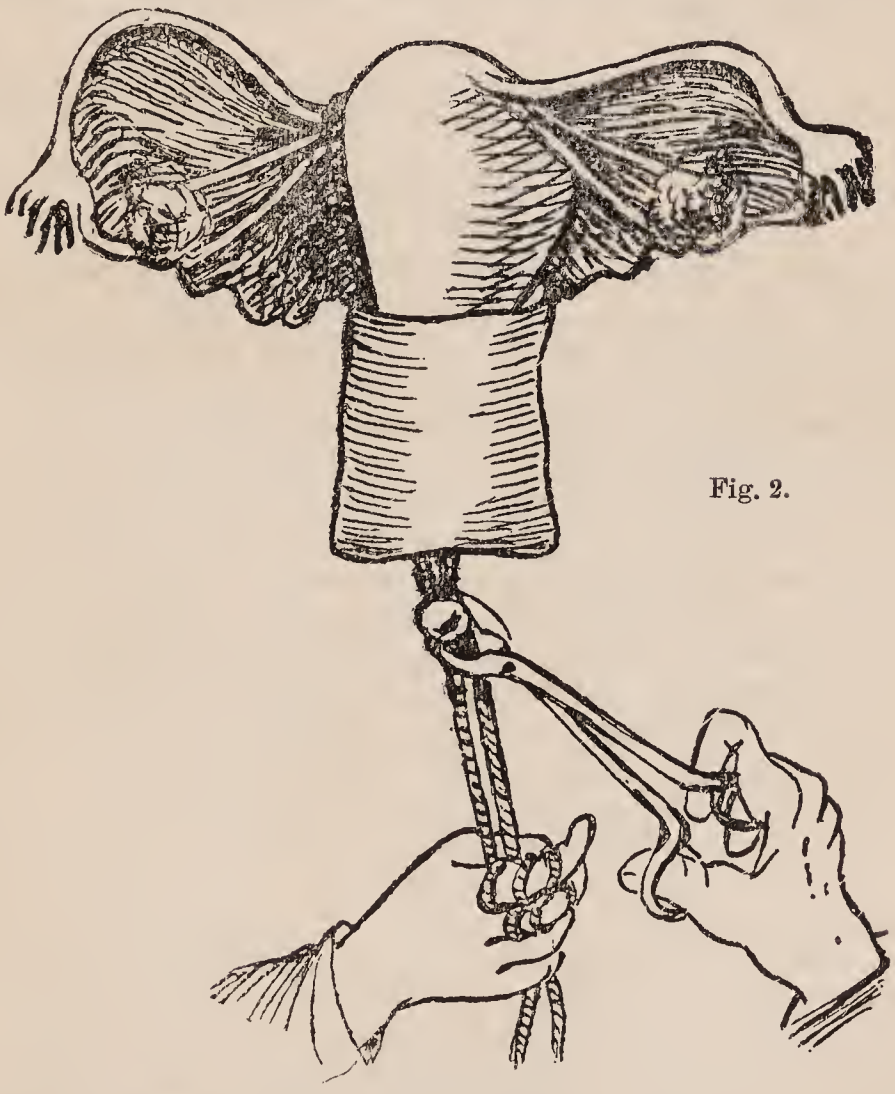


Fig. 2.

It has been argued that the Fallopian tubes are part of the uterus, and therefore, unless they be removed also, excision of the uterus only, for cancer, is an imperfect procedure. Without discussing this debatable point, I will content myself by stating that after the excision of the uterus in the manner indicated, the

operator can, if he please, draw down consecutively each appendage, apply a ligature, and remove it. But in so doing, care must be exercised to avoid including the ureters in the ligatures. Virginity naturally increases the difficulty of vaginal hysterectomy. In one of the operations I performed upon the dead body, the subject was a virgin, and it became necessary to incise the hymen in the median line with scissors. It was not necessary to divide the perineum, and the vagina was readily distended to a size large enough to admit the introduction of the entire hand. Deformity of the pelvis would seriously complicate the operation, and this or other conditions which occasion diminution of the genital passage would guide the operator to choose the abdominal in preference to the vaginal operation, where hysterectomy is advisable.—*Lancet, May* 1, 1886, *p.* 825.

107.—ON 139 CONSECUTIVE OVARIOTOMIES PERFORMED DURING TWO YEARS, WITHOUT A DEATH.

By Lawson Tait, F.R.C.S., Birmingham, President of the British Gynæcological Society.

[Mr. Lawson Tait publishes, in tabular form, one hundred and thirty-nine ovariotomies, performed between Jan. 1, 1884, and Dec. 31, 1885, without a death. Its length precludes the reproduction of the table of cases here, but we give almost verbatim the author's remarks upon the present position of the operation.]

From our recent experience in ovariotomy, it would almost appear as if the time had arrived when we had the last word to say about it, and had now merely to refer to it occasionally in valedictory or inaugural addresses as one of the marvels of the nineteenth century. Certainly nothing more astonishing can be indicated than the advance during the last eight years, at the beginning of which period Sir Spencer Wells left ovariotomy with a mortality of 25 per cent., and the position it has now reached, having a mere fractional mortality, due to influences of a purely accidental kind. By accidental, I mean such influences as are not inherent to the operation itself, influences which may be avoidable, it is true, and ought to be avoided, but which may fairly be classed as outside risk. I do not see, for instance, how tetanus can be avoided; and, therefore, its occasional fatal influence in ovariotomy is sure to be felt. So also death, either directly or indirectly, from the effects of the anæsthetic, will surely come occasionally forward as an unavoidable result. But all the truly intrinsic causes of death have been banished, and I wonder very much if this is true of any other grave operation in surgery.

We speak of the mortality of certain operations, but I doubt very much if we have arrived at any notion of what the mortality of any other operation really is; that is, the mortality due to the opera-

tion pure and simple, not to causes which are avoidable, as unsanitary surroundings, or bad surgery; not the mortality of this or that hospital, this or the other operator, but to the lowest mortality which can be, and, therefore, that which ought to be, achieved.

This success in abdominal surgery has been the basis of a large number of lessons applicable within its own range, and not without benefit to other fields. It has, for instance, absolutely destroyed our fear of the peritoneum, and has justified our opening that sacred sac very much as we open our pockets. It has revolutionised our notions of pathology in some directions, and has confirmed them in others; and it, above all things, overwhelmed with confusion the utterances of therapeutic dogmatists. Baker Brown, after a series of disasters, uttered the truism, "It's the peritonitis that beats us." Now, we beat the peritonitis. On the slightest indication of peritonitis after an ovariotomy, we give a rapidly acting purgative, it matters not what; the patient's bowels are moved, and the peritonitis disappears. This practice I introduced in 1875, and it is now almost uniformly adopted. How different from the views we had drilled into us years ago, that opium was the sheet-anchor of the practitioner in all abdominal troubles, when I say now that all opiates are forbidden in my practice, unless required to ease a dying patient out of the world.

Peritonitis was formerly regarded as a bar to any abdominal operation, but, thanks to the courage of Keith and Wiltshire, it is now the most trenchant argument for immediately opening the abdomen. Let me briefly recite the subsequent history of one of the cases on that list (101), a young girl, only 14, from whom I removed a large cystoma on the left ovary on July 18th, 1884.

On March 4th of this year, I received a letter from Dr. Pearson, of Kingswinford, who placed her under my care, to say that he feared something had gone wrong with the other ovary. I telegraphed to him to bring her over at once, and, when I admitted her to my private hospital, there was abundant evidence to prove that Dr. Pearson was right. The pelvis was occupied by a firm doughy swelling pushing the uterus forward and upwards, and this mass could be felt above the pelvis. To the right side, another similar mass could be felt running up and over the right kidney. It was not clear whether these masses were or were not connected, and they both felt to me like soft cancer, an idea justified by the patient's age. What history could be obtained from the friends was not clear, and, therefore, I recommended that the abdomen should be at once reopened. After some demur, that was agreed to by the parents, and it is fortunate for the child that they gave their consent. I operated on March 5th, and found two large encysted peritoneal abscesses, containing about three pints of the most stinking pus I ever encountered. Neither of the cavities communicated, so far as I could discover, with the general sac of the

peritoneum, nor did they communicate with one another, and I could detect no other fluid or mass in the abdomen. But, in a few days, it became evident that I had encountered and had overcome only half the difficulty. Whether from the lower cavities the rest of the peritoneum became infected, or whether the suppuration of the whole of the sac was the original scheme, I cannot tell, but the whole of the rest of the sac did suppurate, and I drained out of it about seven pints (eleven pints in all) of horrible stuff; and the child is now practically well.

The conclusion is now completely established in my own mind, and receives confirmation every month: "When in doubt, open the abdomen;" the doubt being one that my patient will not recover if left alone. In the case I have just narrated—and it might be supplemented by many other cases just as striking and quite as successful—I might have concluded that the second growth was a mass of soft cancer, and have sent the poor child home to die from my mistake. If it had proved to be cancer on exploration, the chances are infinitely small that I should have done any harm; and now, as the matter stands, I have achieved a brilliant success.

This is the doctrine which I want to preach, for the support of which I have recently had the powerful aid of Dr. Wade; and not all the foolish outcries about the laparotomy epidemic, raised either at Liverpool or elsewhere, or any other kind of opposition, is in the least likely to hinder its propagation. I have not spoken to Dr. Wade precisely on the subject, but I strongly suspect that a powerful and moving influence in his mind, towards the adoption of this view, is a case which was, to me, a revelation and a lesson of the most terrible kind. It was, I think I may say, the initiation of this new course of practice; for I have never since allowed a case of peritonitis to die without at least proposing abdominal section as the proper course.

Many years ago, a lady of high social rank, who honoured me by her friendship, and to whom I was deeply attached, had performed on her by me a trifling uterine operation, which had been done without ill effect many times before. It was the insertion of a sulphate of zinc pellet into the uterus, for the arrest of extreme menorrhagia due to a myoma. She died about fourteen days after, suffering from many symptoms which suggested peritonitis, save that her pulse and temperature always contraindicated this conclusion. Dr. Wade saw her just before the end of her illness. At the *post-mortem* examination, we found a large quantity of pus, all of which could have been cleared out by an abdominal section and drainage.

Three great lessons were taught me by this case: first, that tinkering with the inside of a uterus occupied by a myoma is not satisfactory, and more dangerous than removing the appendages; second, that fatal peritonitis may occur with a low pulse and a low

temperature—a fact I did not know before that; third, that suppurative peritonitis might be treated like any other abscess. And from all these lessons I have most abundantly profited.

Another change effected within the last eight years, and wholly as the result of work done here, a change which has most certainly had considerable effect in reducing our mortality, is the shortening of our incisions. Sir Spencer Wells talks of incisions over five inches as being "long incisions," whereas I regard anything over three inches as excessive, and my average incision is not more than two. To this it has been objected, that it increases the difficulty of the operation; but I answer that it is only so in the hands of a bungling operator. Nothing save irreducible solidity can justify a five-inch incision. The chief argument in favour of keeping the incisions within the shortest limits is the diminution of risk of subsequent enterocele.

This sequel of abdominal section happens in the practice of every one, no matter how the wound be stitched; and any operator who says it never happens in his particular practice, is merely one who speaks rashly, and does not keep his eye on his cases long enough.

The method of stitching the wound together is of sufficient importance to demand a word, if only to condemn the practice, recommended by Sir Spencer Wells, of including only the peritoneum and skin. If you divide skin, fascia, muscle, and peritoneum, you must include all four tissues in your stitches. keeping the corresponding tissues on each side as correctly in relation to each other as possible, if you mean the abdominal wall to have as much strength as it had before you cut it. If you exclude tendon and muscle, you exclude the chief elements of strength in the union. On this important matter, Sir S. Wells was led away by the experiments he made by vivisecting rabbits.

As to the dressing of the wound, I still adhere to the dry absorbent cotton-wool, quite free from any kind of germicide. My fear of germs has steadily diminished; so that, if I could get them in sufficiently large quantities, and found them dry, elastic, and absorbent, I would willingly stuff my pads with them instead of wool.

The main feature of change accomplished within the last eight years in ovariotomy is in the treatment of the pedicle. The clamp has been wholly deserted, and the intraperitoneal method adopted. The varieties of this method are practically only two, the silk ligature and the cautery. I adhere uniformly to the silk ligature used in the method known as the Staffordshire knot, and it has never failed me. Dr. Keith and I have a friendly rivalry in our respective advocacy of the cautery and the knot, but I prefer the knot because it is universally applicable, whereas the cautery cannot be employed for intrapelvic work.

The method of cleansing the peritoneum has also undergone a considerable change, and the elaborate system of sponging which I used to practise, as directed by Sir Spencer Wells, has gradually given way to a system of washing which is much better. I fill the abdomen with blood-warm water, and wash all the organs, and I repeat this till the water comes off clear; and I wish to say that the water used has not been boiled, and contains no drug or chemical substance beyond what is stated in the report of the Medical Officer of Health for the Borough. The water is plain unfiltered tap-water, warmed by the addition of enough from the boiler. It is full of germs, and spores, and small beasts of thirty-four different varieties, according to a careful report of Dr. Alfred Hill, published some few years ago.

The only point remaining, and worthy of further allusion, is that all the conclusions formulated by Sir Spencer Wells in 1878, based on his own experience, have, without exception, been reversed by the statistics freed from his heavy mortality. One of his conclusions was a very serious one, for it hampered progress very much, especially in operations for removal of the uterine appendages. It was to the effect that removal of two ovaries was a far more fatal operation than removal of one.

This conclusion ought to have been, that two pedicles in a clamp were far more risky than one; now it is evident that it is in no way more risky to remove two ovaries for cystoma, or anything else, than to remove one. In connection with this point, it may be as well to say that, in the period embracing this series of 139 successful cases, there has not been in my practice a single incomplete operation.

Now that we have cleared away all our superstitions, and view the facts in a more reasonable light, we see this operation of ovariotomy not only the most successful achievement in surgery, but we have to regard it as a portal, which, opened within the last eight years, has led to innumerable other blessings to suffering humanity. —*British Medical Journal, May* 15, 1886, *p.* 921.

108.—ON THE RELATIONS OF PUERPERAL ECLAMPSIA TO BRIGHT'S DISEASE.

A Clinical Lecture by James Tyson, M.D., Physician to the Philadelphia Hospital.

The patient before us has a brief antecedent history, which is as follows: She is twenty-four years of age, and has been a domestic. Her father died of tubercular phthisis, but her mother is living and in good health. She had one brother, who is said to have died of "œdema of the brain." She herself always enjoyed good health until eight weeks ago, which was four weeks before her confinement. About that time there occurred dropsy of the face, hands,

and legs; and with this a frequent desire to pass water. These symptoms continued until the morning of her confinement, when suddenly her eyesight began to fail, and in a short time she became completely blind. She remembers nothing that occurred after this, but her mother told her that she had convulsions during labour. The patient was unconscious from early Friday morning until late Saturday night, in all, about thirty-six hours.

Some of you will at once recognise that these convulsions were what are commonly termed puerperal convulsions. Examination of her urine when she was admitted to the hospital, showed that she had large albuminuria, and that casts of the uriniferous tubules were present in the urine. We therefore concluded that while she had puerperal convulsions she also had uræmic convulsions; and it is one of the purposes of the lecture to-day, besides discussing the renal condition from which she is convalescing, to consider the relations between that condition and puerperal convulsions.

The symptoms mentioned were the only ones presented on admission. Whatever of dropsy there may have been, had entirely disappeared. The blindness had also gone; but the urine contained albumen in considerable quantity, while the microscope revealed hyaline casts, in some of which there was a small quantity of granular matter. There is, however, nothing distinctive in the presence of hyaline casts, as these are found in every form of renal disease. The examination of the urine, therefore, did not afford us the means of making a differential diagnosis. Hence we were compelled to have recourse to the history of the case; and from what we know of the relations of puerperal convulsions to the symptoms which she has had, I conclude that the patient was suffering with acute Bright's disease, from which she is now convalescent, and that while she had puerperal convulsions she had also uræmic convulsions.

What are the facts which justify this conclusion? In the first place, we have the fact, substantiated by numerous observations, that the majority of cases of puerperal convulsions, associated with albuminuria, are due to acute nephritis. I am aware that this view is not accepted by everyone, but I have taken much pains to examine the evidence bearing upon this point, and I feel perfectly satisfied that the large majority of cases of puerperal convulsions associated with albuminuria and dropsy, are the result of acute nephritis. I do not pretend to say that it is impossible to have puerperal convulsions which are independent of Bright's disease. On the contrary, I have myself seen such cases. In these, there has been no albuminuria or dropsy previous to confinement, but the patient has been a primipara, the labour tedious, and the nervous system has been in a state of tension in consequence of anxiety and pain for perhaps twenty-four hours. I have seen puerperal convulsions immediately after delivery in such cases, in

which I attributed the convulsion to a sort of explosion in a nervous system which has been in a state of prolonged high tension. Such cases always get well, and they seldom have more than one or two convulsions. Where, however, the convulsions are due to Bright's disease, they are not limited to one or two, but they continue to recur, as in the present instance, for perhaps twenty-four hours, and unless prompt treatment is instituted, the patient is very likely to die. Such a case was our own patient. When we first saw her, she had passed through the ordeal of the convulsions, and had reached that stage where the distinctive varieties of casts had disappeared. There were no longer epithelial casts, or blood casts, but simply hyaline casts. It takes a long time for the uriniferous tubules to throw off all the casts formed within them, and for some time after all activity in the inflammatory process has subsided, casts may continue to be discharged. The last to disappear are hyaline casts, which are those produced by the slightest derangements in the circulation of the kidney. In this case the quantity of albumen is rapidly decreasing.

As I do not want to be understood as saying there cannot be puerperal convulsions without concurrent Bright's disease, so I do not wish to be regarded as claiming that dropsical swelling cannot be present without Bright's disease. It may be as the result of simple pressure by the gravid uterus; but where there are dropsy and large albuminuria, especially if associated with sudden blindness and convulsions, we may rest pretty secure in the belief that we are dealing with a case of acute nephritis. These cases of acute nephritis, as a rule, get well very rapidly after delivery, because they are, in a measure, really brought about by the puerperal state, and with the removal of the cause disappears the most important obstacle to rapid recovery.

Why does Bright's disease result from the pregnant state? The answer may not be altogether satisfactory, but it is certain that the condition involves the accumulation in the blood of a large amount of effete and therefore poisonous matter. We have, in fact, the same agencies operating as in many cases of Bright's disease from other causes. It is well known that acute Bright's disease is a very common sequel of scarlet fever. It is here due to the presence in the blood either of the scarlet fever poison itself, or of effete matter which is retained in consequence of the inactivity of the skin; or both of these sources of poison may be combined. In the puerperal state we have likewise conditions favouring the accumulation of effete matters. The woman is at once the eliminator of her own excretions and those of the child, the retention of which is the essential cause of the Bright's disease. The obstruction to the circulation, due to the compression of the vessels by the gravid uterus, doubtless adds to this, but it is of itself insufficient to cause it.

There are two of the symptoms presented by this patient to which I desire to refer. The first is the blindness, and the second the convulsions. This woman, as we have heard, became blind previous to the occurrence of the convulsions. What is the cause of this loss of vision? It is known that there is a form of Bright's disease in which there are organic changes in the retina, technically termed albuminuric retinitis. These changes are most frequently associated with chronically contracted kidney. The defect of vision under such circumstances comes on slowly, but blindness, with which this patient suffered, came on suddenly, and is of a very different character. It occurs suddenly, and often disappears as suddenly as it came. Such blindness evidently cannot be due to structural change in the retina. I do not know that we are sure as to its precise cause, but the most rational explanation is that which attributes it to the same cause that produces the uræmic convulsions—that is, an accumulation of urea and allied substances in the blood-vessels of the brain, affecting the centre of vision, and thus blotting out, for the time being, the responsiveness of that centre to the stimulus to which it usually responds. The convulsions are caused in the same way. The nerve cells are irritated by the presence of these products, and the response comes in the shape of a convulsion.

We have in these facts the key to the treatment. Unquestionably, the most efficient treatment of puerperal convulsions is blood-letting, for by blood-letting we draw from the system the agent which is the most important factor in the production of uræmia. But it may be said by some that venesection is not recommended in the treatment of the convulsions of acute Bright's disease. Why then should it be used in puerperal cases if the same essential causes prevail in both?

I believe, however, that it is a mistake not to treat the convulsions of non-puerperal Bright's disease in the same manner, and that if bleeding were more common, the results would be more satisfactory. I do not hesitate to advise you to bleed in the convulsions of acute Bright's disease. No harm can follow the removal of from eight to sixteen ounces of blood from an adult patient, so that if it does no good, it does no harm. You must not, however, expect equal success, because there is still an important difference in the conditions. In the instance of renal disease accompanying the puerperal state, the termination of this state not only removes the remote cause of the disease, but the disease itself is usually less advanced, and the chances for recovery may thus be increased.

Afterward, or coincidently with this measure, anæsthetics are often of great service, and the patient is kept, with great advantage, more or less thoroughly under the influence of chloroform or ether, in order to keep off the convulsions. This is not always necessary, for in many cases chloral answers every purpose. There

is no condition in which chloral can be relied on more confidently, in connection with venesection than in puerperal convulsions, and in the convulsions of Bright's disease. It must be given in full doses. I usually give an adult one drachm of chloral by enema. It is not worth while to give a smaller dose. The dose named may be repeated; but in the majority of cases one dose is sufficient. Chloral has the advantage over anæsthetics, in that it is possible to judge accurately of the condition of the patient When a patient is under chloroform or ether, it is impossible to note the changes in mental condition by which almost alone we are to judge of improvement. If bloodletting and chloral are not sufficient, chloroform or ether must be resorted to. Chloroform, dangerous as it is in ordinary surgical operations, appears to be harmless in puerperal conditions.

I do not know how this patient was treated before she was brought to the hospital. Active treatment in every case is not absolutely necessary —I have known cases to get well without treatment; but this is running a great risk. Given a case of acute Bright's disease, not too far advanced, with the cause removed, and the immediate danger of the convulsions prevented, I do not know that it is necessary to pursue any specially active treatment. Rest in bed, with an easily assimilable diet, as one of milk, is generally all-sufficient. The woman is gradually improving, and will, I have no doubt, be as well as ever in a short time.

There are two other grades of complication of Bright's with pregnancy to which I desire to call attention, both of which are far more dangerous than that of which we have been speaking. The first is a puerperal case with Bright's disease, where the renal affection is not the immediate result of the puerperal condition, but where it has previously existed; for, although these cases occasionally get well, the mortality is much higher than in those cases of which we have been speaking.

There is a second class of cases in which, in my experience, the prognosis is invariably fatal. A girl of eighteen or twenty, with Bright's disease, who subsequently marries, is almost certain to die in her first confinement. This is an exceedingly important practical point with reference to the question of marriage of girls with Bright's disease. If a woman has had two or three children, and then acquires Bright's disease, although the condition is more dangerous than where the renal condition comes on during pregnancy, she still has a chance of getting as near well as she was before she became pregnant. The probabilities are, however, that the kidneys are left a little more damaged than they were previous to pregnancy. The renal disease is better than it was during pregnancy, but a little worse than it was before pregnancy. It is not so with the primipara who had Bright's disease before marriage. Her marriage-bell is her death-knell. In

a case like the one before us, however, where there probably was no affection of the kidneys previous to pregnancy, there is every reason to believe that recovery will be complete.—*Medical News, May* 1, 1886, *p.* 477.

109.—ON THE TREATMENT OF PUERPERAL ECLAMPSIA.

By John W. Byers, M.D., Physician for Diseases of Women to the Royal Hospital, Belfast.

[After a description of four cases of puerperal eclampsia, and an examination of the various theories held in regard to the relation of albuminuria and renal disease to the convulsive seizure, Dr. Byers says of the treatment:]

I think we are all pretty well agreed that for the quieting of the convulsions there is no remedy so good as chloroform; and Barnes's rule is a safe one—to make no examination, not to pass the catheter, and to force no food or medicine in any case where a fit is probable, until the patient is under the influence of chloroform. Dr. Lusk's plan is valuable—viz., after beginning with chloroform, to give per rectum half a drachm each of chloral and bromide, and to stop the anæsthetic when the effect of the other drugs becomes apparent. Other remedies, such as pilocarpine, amyl nitrite, nitroglycerine, venesection, and morphine (subcutaneously), have at different times been recommended; but, in a severe case, with fits rapidly recurring, our sheet-anchor is chloroform. The question then arises—What is the best obstetric management of these cases? In some of the cases, fortunately, labour has already commenced, and then our duty is to assist it; but, if it has not begun, should we interfere? I think there can be no doubt, considering how dangerous the complication is both to mother and child, that labour should be induced so as to empty the uterus. This can best be done by emptying the bladder and rupturing the membranes. If labour goes on favourably no further assistance may be needed, but in cases of delay we can use Barnes's bags, and turn or deliver with forceps, according to circumstances. In certain mild cases, if there is a wide interval between the fits, and if in this interval there is an absence of coma, some recommend the administration of purgatives, and chloral and bromide; but I think, even in those cases (recollecting that statistics show that the prognosis is worse when the convulsions arise previous to labour), we must watch the patient very narrowly, and be ready to interfere. As a rule, on delivery the fits cease; if they continue, the best line of treatment is to administer chloral and bromide.

In many cases of eclampsia the attack comes on quite suddenly, and we are summoned first when the patient is actually in a convulsion; but, in other cases, certain symptoms put us on our guard, and from their presence we should adopt a prophylactic treatment.

Supposing that during pregnancy we find albumen present, we should give purgatives, and keep the patient at rest and on a milk diet. Both Tarnier and Chantreuil recommended this form of diet. All nitrogenous food should be avoided, and a course of iron should be prescribed; if, however, the regular examination of the urine shows that the amount of albumen is large and *steadily* increasing, if there are casts and œdema of the face and upper extremities, and if, in addition, any cerebral symptoms appear, then undoubtedly labour should be induced without delay. Further, if towards the end of gestation the urine becomes diminished in amount, if there is a good deal of albumen, and if to these symptoms be added the presence of headache, we should at once administer chloral, and keep a most careful watch on our patient, so as to be ready to induce labour if convulsions set in.—*Dublin Medical Journal, Aug.* 1886, *p.* 113.

110.—ON THE USE OF CHIAN TURPENTINE IN CANCER OF THE TONGUE, LIP, AND UTERUS.

By John Clay, M.D., Professor of Midwifery, Queen's College, Birmingham.

It is now six years since I first communicated to the Lancet (March, 1880) some observations, with illustrative cases, on the use of Chian Turpentine in the Treatment of Cancer. Much outspoken, not to say hostile, criticism of the remedy characterised the discussion which resulted from that communication. I have not troubled myself to enter upon this controversy, nor, with the space at my disposal, can I now venture to do so. I have been content to steadily pursue the treatment in the course of my own practice, and with such excellent results as to justify me in adhering to the statements I made in the paper above referred to. As the test of experience is the most conclusive reply that can be made to the criticisms and objections offered to my method of treatment, I now submit such evidence, in the form of brief notes on three cases of cancer, in different positions, each treated by Chian turpentine. I offer these, not as isolated examples, but as types of a number of successes obtained by similar treatment in cases alike as to their character and their situation. In the name of suffering humanity, I ask the medical profession to consider these cases without prejudice, and in the hope that the narration of them may lead to a more extensive and resolute trial of a remedy the high value of which I have tested and proved in my own practice.

Case 1.—*Epithelioma of the Tongue.*—On March 30th, 1885, I saw, in consultation with Mr. Bury, of New Barnet, Mr. M., of Shrewsbury, aged 59 years, a gentleman retired from business. The medical gentleman in charge of the case informed me that the patient was suffering from epithelioma of the tongue, and that he

had consulted two of the highest authorities in London, who had confirmed his diagnosis, and had pronounced the case to be unsuitable for operation. It was reported to me that one of the consultants confidentially expressed the opinion that the disease would probably prove fatal within two months. The disease was first noticed about four months previous to the above-named date. It commenced with soreness on the right side, at the junction of the root of the tongue with the floor of the mouth. There was some ulceration at this part, which was attributed to the irritation of a decayed tooth. The tooth was extracted, but the soreness and ulceration were not relieved, but gradually increased. The patient has never had syphilis. He has had caustics applied occasionally, and had taken sedatives to ease the pain. On examination, I found, in the situation above mentioned, an ulceration about the size of a sixpence, with a hardened and everted edge on the tongue side of it. There was a row of raised shot-like epithelial growths (not in a state of ulceration) proceeding from the ulcer on the lateral border of the tongue, and running forwards towards the tip for about three-quarters of an inch. The tissues around the ulceration and growths were thickened and hard from cancerous infiltration. There was an enlarged submaxillary gland about the size of a pullet's egg. The movements of the tongue were limited and painful. The patient was well nourished, but depressed and anxious. I gave an unfavourable prognosis, but thought it was a case in which Chian turpentine ought to be perseveringly tried, as that seemed to be the only alternative left to him. He was ordered the following: Eight ounces of Chian turpentine mixture (Southall's) and two drachms of resorcin, two teaspoonfuls three times daily; and to have the ulcer and growths slightly painted on alternate days, respectively with chromic acid solution (ten grains to the ounce) and solution of perchloride of mercury (one grain to the ounce). On April 16, 1885, Mr. Bury wrote to me thus: "There is no arrest of the glandular enlargement, which, if anything, is somewhat more marked. The ulcer in the tongue about as before. I presume we must not lose all heart because the remedies do not seem to have arrested the disease; possibly sufficient time has not elapsed since the commencement of the use of the medicines." On June 30th he again wrote to me, and in reference to this point stated that "about a week after your reply to me the enlargement of the glands began to disperse, and in about three weeks it was entirely gone. The ulcer of the tongue is, I believe, quite healed." I mention these facts, as it is a too common error on the part of medical men to imagine that the remedy is useless because its effects are not apparent in a few days. I did not see the patient again until July 10th, 1885, when I was surprised to find him looking so well. As I had heard nothing of him I feared that he had succumbed to the disease. On examination, I

found the enlarged gland had disappeared; the tongue could be moved freely and without pain; on the right side it looked and felt quite normal, as though it had never being affected. On the left side of the neck, however, I discovered an enlarged gland, and on the lateral border of the tongue on the same side I found an epithelial growth of the size of a hazel-nut in a sloughing condition. The remedies were ordered to be continued as before. I saw the patient about a month afterwards. The newly discovered growth had all but disappeared, and a month later I found the parts free from disease. The medicine was directed to be taken in diminished doses, and the local applications to be discontinued. I saw him in December of the same year, when he was quite well and proposed spending some weeks on the Continent. I quote the following remarks on the case from a letter from Mr. Bury, the medical gentleman already referred to: "You will be greatly pleased with the success of your remedies, which have restored to life, one may truly say, under God's blessing, one doomed to die in the course of a few months."

Case 2.—*Epithelioma of the Upper Lip.*—Mrs. W., aged 52 years. General health good; has had four children, but no miscarriages; never had syphilis; menopause about eight years previously. She consulted me on Oct. 20th, 1883, at the Queen's Hospital, ostensibly for a vaginal discharge, but really for a growth occupying nearly the whole of the upper lip and involving the lower portion of the left ala nasi. She had been under the care of Mr. W. Freer, who had advised its removal. It presented a fungating raised appearance, and was irregular in outline. The surrounding tissue was hard to the touch, and the cancerous infiltration extended some distance around the nodule. A small portion was excised by scissors, and examined by the resident physician and resident obstetric surgeon under the microscope, in the fresh state, and well-marked "epithelial nests" reported. On account of the occasional hemorrhages, the growth was painted over once with perchloride of iron solution, and afterwards dressed with vaseline. The *simple* Chian turpentine mixture was ordered to be taken three times daily, in two-teaspoonful doses. The patient presented herself regularly every fortnight at the hospital, and at the end of ten weeks the mass had shrunk considerably, and had a black appearance; the infiltration had disappeared, and she was now free from pain. In the twelfth week the mass felt loose, but it was not interfered with. Thirteen weeks from the commencement of the treatment, on getting up in the morning, the patient found that the mass had separated during the night. The lip was free from hardness, and movable. There was a white cicatrix about the size of a shilling, and a slight notch in the margin of the lip. I saw her on August 16th, 1886, she was quite well, and there had been no recurrence.

Case 3.—*Epithelioma of the Os and Cervix Uteri.*—Mrs. W.,

aged 54 years. Very feeble and emaciated, and cachexia well marked. Could not walk a hundred yards even with assistance. Has had very profuse watery and sanguineous uterine discharges for several weeks. Mr. L. Tait, who had seen her previously, had, she stated, pronounced the case to be uterine cancer, and incurable, and that she could not live a fortnight. On examining the uterus, a mass of epitheliomatous cancer, about the size of a hen's egg, occupied the upper part of the vagina, but believed to be limited to the uterus; it bled freely from the examination. I ordered the Chian turpentine mixture with resorcin, and directed her to use vinegar and water injections. At the end of seven weeks the hemorrhage and leucorrhœal discharges had nearly ceased, and the patient could now walk more than a mile twice weekly to see me. The growth had almost disappeared. At the end of five months she had increased 15 lb. in weight. About the seventh month she had an attack of facial paralysis affecting the right side, which probably arose from cold. She recovered almost completely. Now (a year and a half from the commencement of the treatment) she can attend to her household duties as well as she could before her illness. The growth has cicatrised completely. There is a small nodule, which appears to be healthy, and represents the os and the cervix of the uterus.—*Lancet, Oct.* 16, 1886, *p.* 720.

111.—ON CHIAN TURPENTINE IN THE TREATMENT OF CANCER.

By G. W. F. Bury, F.R.C.S., New Barnet.

[The following communication is peculiarly important as confirming Dr. Clay's statements about the action of Chian turpentine, also because it brings in Dr. Playfair as a witness to the result.]

Dr. J. Clay has published an account of the successful treatment by Chian turpentine of a case of epithelioma of the tongue which was under our joint care, and, with your permission, I should like to supplement this by the narrative of another case, with a like result from the same treatment.

Mrs. G., aged 49, sent for me in Oct., 1883. She had been suffering from occasional and severe hemorrhage from the vagina for some five or six months, accompanied with but little pain and slight colourless discharge in the intervals of the hemorrhages. On examination per vaginam, the os and cervix uteri were replaced by an extensive ulcerating surface of a decidedly malignant character. The hemorrhage was soon arrested by cotton-wool plugs saturated with glycerine of tannin, but it frequently recurred, and between its arrest and reappearance a purulent discharge, with the characteristic cancerous odour, was observed. In the hope that some alleviation of the symptoms might result, I gave her the Chian turpentine pills according to Dr. Clay's formula, and she

took them for some weeks. However, there was no improvement in any way, and it was decided that Dr. Playfair should see her in consultation. He did so, and confirmed my diagnosis of cancer, considering it to be of the medullary form. His prognosis was that "she could not last many weeks." He advised the carrying out of Dr. Clay's treatment in its entirety—viz., the Chian turpentine mixture, and the insufflation of charcoal and tannin per vaginam. The treatment was rigidly carried out, mainly by my coadjutor, Mr. W. A. Fox. Instead of losing ground, notwithstanding the persistence of the discharge and occasional hemorrhage, her strength was maintained during the next few months, when all her symptoms gradually abated. The treatment, however, was fully continued for nearly a year, at the end of which time she was practically cured, and about twenty months from the time Dr. Playfair first saw her, he again examined her, and said that she was perfectly cured, to his extreme astonishment. She remains without a vestige of the disease at the present moment.

I am tempted, with your permission, to add a note respecting a case of long-standing cancer of the breast in a woman aged 48, who had been an out-patient at a metropolitan hospital, and was discharged as unfit for operation. The left breast was destroyed down to the ribs, and its place taken by a superficial cancerous ulcer surrounded by nodules of cancer. She took Dr. Clay's remedies for some months, and then discontinued them on account of the expense. I have seen her to-day (October 16th) and find that the nodules have much diminished in size, that all her pain had disappeared, and that she has gained and is gaining flesh.

May I suggest as one of the reasons of the failure of this treatment as carried out at the Middlesex Hospital, and by medical men generally, is an insufficiently long trial of the remedies—in fact, too great haste in discarding a treatment which does not give immediate results.—*Lancet*, *Nov.* 6, 1886, *p.* 895.

112.—ON OBSTETRICAL PARALYSIS.

By William Thorburn, M.D., B.Sc., Surgical Registrar to the Manchester Royal Infirmary.

[Besides the report of, and comments upon, his own case, Dr. Thorburn's paper contains a careful *résumé* of all the hitherto published cases.]

The following case was brought to Dr. Ross's out-patients' room at the Manchester Royal Infirmary on August 26th, 1885, and was then very kindly handed over to me, by Dr. Ross, for treatment and further observation.

The patient was a baby, three months old, and was brought by its mother on account of a paralysis of the left arm, which had been noticed at the time of its birth. The mother had had three

children before the birth of the patient, all being perfectly healthy, and she stated that all her labours had been difficult, and had necessitated instrumental assistance. She had had no miscarriages. The patient was born in May last, the labour being, as usual, difficult, and delivery was effected by forceps. She was attended by Mr. Worswick, of Chorlton Road, to whom I applied for information as to the course of the labour, and who very kindly gave me all the information in his power, but, unfortunately, he took no notes at the time, and was unable to recall fully the circumstances of the case. In answer to my question, Mr. Worswick tells me that the labour had been a lingering one, but that he "applied the forceps and all was over in a very few minutes;" he says that "it is certain that no injury happened to the child during birth." From the above statements we may probably assume that the head presented, as any less usual condition would not have escaped the memory of the accoucheur.

The paralysis of the arm was noticed the day after the child's birth, and very shortly afterwards general tonic treatment was adopted, but galvanism, although ordered, was not employed, owing to the parents being unable to obtain a battery. At the end of some three months the child was, as above stated, brought to the Infirmary. An examination of the case at that time and on succeeding days gave the following results.

The left arm was completely paralysed, hanging down by the patient's side, with marked inwards rotation of the humerus; the elbow joint and the wrist were extended; the hand was semiprone, and, owing to the rotation of the humerus, the palm was directed inwards and slightly backwards; the fingers and thumb were flexed, the thumb less markedly so than the fingers. In whatever position the limb might be placed, it always fell back to the above. There was no obvious difference in the size of the two upper extremities, but on measurement the greatest circumference of the left forearm was found to be about half an inch less than that of the right. The left arm was distinctly softer and more flabby than the right. Neither the deltoid nor any of the muscles of the arm or forearm contracted on the application of the faradic current, the trapezius, pectoralis major, and latissimus dorsi acted readily, but it was found impossible to ascertain the excitability of the supra- and infra-spinati, owing to the small size of the parts and struggles of the child. The galvanic reactions were investigated on September 3rd with a Leclanché battery, and the flexors of the wrist and fingers gave a contraction with fifteen cells on anodal closure, with twenty cells on kathodal closure, thus presenting the "reaction of degeneration," while the extensors and the whole of the muscles of the upper arm gave no reaction at all.

Owing to the patient's youth, it was not possible accurately to investigate sensation, but it was found that pricking or pinching of

both arm and forearm, while they elicited signs of pain, did so much less readily on the left than on the right side. The left was distinctly colder than the right upper extremity, and was pale, with slight tendency to blueness of the hand and fingers. The left radial pulse was very slightly feebler than the right. There was no evidence of trophic lesion of the skin or other tissues.

The left palpebral fissure was very obviously smaller than the right, causing an appearance of left ptosis; and the left pupil was also markedly contracted as compared with the right, the difference being more marked in diffused light. Both pupils contracted on exposure to light. There was no other difference between the two sides of the face, both being equally developed, and of the same temperature and colour, while the hair grew equally on the two sides of the head.

The general health of the child was good, and no other abnormality was detected.

The paralysed limb was now ordered to be warmly wrapped up, and rubbed daily, the mother being instructed to bring the child twice weekly to be galvanised. This treatment was continued until September 14th, between which date and September 28th the child had to be kept at home, owing to an attack of bronchitis. When seen again on September 28th, there appeared to be slight grasping movements of the fingers; both anodal and kathodal closure produced a contraction with twenty cells in the flexors of the wrist. (In all cases one electrode was placed over the lower cervical spine, the other over the muscle to be stimulated.) There was no other change. From this time no improvement was noted, although galvanism was continued, with occasional short intermissions, until the end of December. The limb became gradually softer and smaller as compared with its fellow. The faradic current never gave any reaction, nor did the galvanic when one electrode was placed in the axilla, the other over the spine; the muscles above-mentioned were the only ones which could ever be got to yield any reaction to direct galvanic stimulation, nor did their reaction present any variation. The apparently slight power of grasping did not increase, but the fingers showed a tendency to contraction, which was met by systematic passive extension. Sensation on the other hand improved, and when the child was last seen no difference could be made out between the two limbs. When last seen, on January 4th, 1886, the deltoid and upper arm muscles were much wasted, the upper arm being much softer and more flabby than the forearm or its fellow. The measurements then taken were as follows: Circumference of left upper arm, $4\frac{1}{4}$in.; of right, 5in.; of left forearm, $4\frac{3}{4}$in.; of right, 5in. The coldness of the limb was as marked as at first. The eye symptoms had undergone no alteration. Under these discouraging circumstances, further treatment appeared useless.

As regards the *causes* of the injury, we can certainly point to four, viz.: (1) The direct injury of the brachial plexus in the posterior triangle of the neck by pressure of the blade of the forceps, as in Danyau's case. (2) It may arise from pressure on the plexus in the axilla by extraction with the bent finger or a blunt hook, as in one of Duchenne's cases. (3) Another cause is severe traction on the arm, which is held above the head, this condition usually obtaining in cases when the breech presents and the arms are extended; here the lesion may be due either to direct rupture of the plexus by over-extension, or to its compression by forcible drawing back of the clavicle, as in cases of Erb's paralysis of the adult (Ross). (4) Effusion of blood in the region of the brachial plexus, from whatever cause arising, may also produce paralysis, but in none of the observed cases was this present without the co-existence of some of the other causes of the lesion.

The *diagnosis* of obstetrical paralysis will in most cases be sufficiently easy. If there be a fracture or dislocation, it may be ascertained by the usual means. Spinal paralysis would not be unilateral, nor would it have the localisation in special muscles here seen. Cerebral paralysis would probably be more extensive, and would give rise later on to spasm and rigidity, while there would be no "reaction of degeneration" in the muscles.

The *prognosis* will depend mainly upon the duration of the paralysis and the electric reactions of the muscles. Where the case is at once seen and treatment commenced early, partial or complete recovery will probably ensue. But if there has been time for atrophy of the muscles, if these present the reaction of degeneration, or if the case have lasted a long time without improvement, we can hardly hope to do any good. Our own case was almost hopeless from the first, owing to the entire absence of response to electricity in most of the muscles, and the presence of the reaction of degeneration in the others. Sensation appears to have returned in all the published cases.

As regards the *treatment*, there are certain obvious measures to be adopted, such as keeping up the general health of the child, and promoting the circulation of the limb by warmth and friction. It is well also to counteract the inwards rotation of the humerus by frequent passive rotation outwards. But the essential point is the early use of some form of electricity. Where muscular contraction can be produced by the faradic current, this should be used, but where this has no effect we must employ the galvanic current. It is needless here to dwell upon the details of this treatment, which do not differ from those of its use in other peripheral paralyses; but we must not abandon it too soon, even if there be no obvious improvement, as some apparently hopeless cases have only begun to amend after a very prolonged electric course. In later life, should the upper arm remain paralysed and the hand

useful, the latter may be made more valuable to the patient by the employment of some apparatus to fix the upper part of the limb and maintain the elbow in a flexed position, or possibly by excision of the elbow, with such subsequent treatment as shall ensure an ankylosed flexed joint.—*Med. Chronicle, March, p.* 466.

113.—ON THE GLYCOSURIA OF LACTATION.

By W. J. Sinclair, M.D., Hon. Physician to the Manchester Southern Hospital for Women and Children.

[Dr. Sinclair, who has recently had his attention accidentally drawn to the appearance of sugar in the urine of lactating women, publishes an elaborate and exhaustive paper on the subject, and though it is perhaps a matter of greater interest to the physiological chemist than to the practical physician, the fact that now and again the condition has been mistaken for true diabetes, would seem to justify the reproduction of the concluding portion of Dr. Sinclair's article. The case which first aroused Dr. Sinclair's interest in the question was that of a woman who had been admitted for restoration of a ruptured perineum. She had been confined three months previously, and was still suckling her infant. Through some fault of the patient's friends, the child was not brought to her for twenty-four hours, the breasts became greatly engorged and painful, and the temperature rose to 102°. A routine examination of the urine showed reduction of Fehling's solution used in the ordinary method. After weaning, the urine returned to its normal condition. Since the time of this first observation, the writer says he has never missed an opportunity of testing the urine of women in whom the breasts were engorged from any cause whatever during the period of their functional activity, and he has never failed to find sugar in greater or less amount. After the first engorgement, the amount of sugar, as indicated by Fehling's test, varies unaccountably, and sometimes it continues to show its presence intermittently for a long time. Two facts strongly brought out in the paper would seem to indicate a means of distinguishing the condition from true diabetes. First, there seems in the glycosuria of lactation to be no constant relation between the density of the urine and its power of reducing copper salts (a specimen sp. gr. 1014 was found to reduce after the same manner as one of sp. gr. 1035); and, secondly, the fermentation test ordinarily applied failed to confirm the observation made with the copper salt. Dr. Sinclair remarks on the latter point:—"My own observations with the fermentation test would lead me to affirm that there is a slight evolution of gas, which becomes much more marked after boiling a specimen with sulphuric acid." It appears, as in diabetes mellitus, that the amounts of solid matter and of urea are relatively increased in the samples in which sugar

is found. After reference to the writings of Playfair, Matthews Duncan, Angus Macdonald, and of several continental writers, the author proceeds:]

All the researches published before those of Hofmeister only demonstrated the existence in the urine of a reducing substance, whose behaviour towards the ordinary tests for sugar made its identity with sugar almost certain. It was also shown to maintain a certain relation to the secretion of milk, but its identity could not be declared fully established. Kaltenbach followed the method of Hofmeister pretty closely, and succeeded in proving that the reducing substance was milk-sugar.

He details the elaborate process by which he succeeded in separating milk sugar in the crystalline form, and he then mentions how the substance thus separated answered to the tests. Besides the polariscope test, by which it was found to produce rotation to the right, and the fermentation test, after boiling with dilute sulphuric acid, he lays great stress upon the mucic acid test, *i.e.*, the production of mucic acid by gently warming the sugar crystals with nitric acid. With regard to the fermentation test, he says that he obtained with yeast practically no result, merely a few gas-bubbles in the highest part of the tube after it had stood several days, whereas a corresponding sample of the prepared urine which had been previously long boiled with dilute sulphuric acid gave a decided evolution of gas. Kaltenbach says that in this respect his results agree exactly with those of Hofmeister. I may mention here, although not logically in its proper place, that in all the fermentation tests instituted by myself, or by the friends who have worked at my suggestion, there was a slight but distinct evolution of gas, certainly more in proportion than one would expect from Kaltenbach's description. "When a large quantity of yeast is added to a dilute solution of milk-sugar, fermentation sets in only gradually." This is all that is said on the subject in Schorlemmer's "Chemistry of the Carbon Compounds," and it corresponds exactly to our experience.

The explanation of the physiological process, on which the presence of sugar in the urine during engorgement of the breasts depends, seems evident. We have analagous resorption in obstruction to the flow of bile, and probably also in retention of urine. The milk is retained in the ducts, and at the very innermost point of its formation in the acini; when the tension reaches a certain grade in its relation to that in the blood vessels and lymphatics, transudation of the transudable constituents of the milk into the lymphatics begins. These constituents of the milk appear to be carried unchanged through the kidneys. As to this point, however, there is room for some difference of opinion and further inquiry. We have observed a peculiar play of colour, a sort of opalescence, an absence of precipitation or filtrability, and other

peculiarities which have not been so far explained, and are not referable to the reducing power of simple milk-sugar. In the cases alluded to, the phenomena are not explained by the presence of albumen, mucus, or uric acid.

The casein and fat in the milk are said not to become re-absorbed under the pressure in engorged breasts. They do not, in experiments at least, pass through animal membranes, and that is perhaps too readily accepted as a proof that they need not be looked for in the urine. But what becomes of these constituents? We do not often have galactocele. The casein and butter do disappear as well as the salts and sugar, though not so rapidly, and if they do not appear unchanged in the urine, their equivalents must be excreted in some form. It is probable, therefore, that continued exact analysis of all the constituents of the urine in glycosuria will throw light on the resorption and excretion of all the constituents of the milk.

The closer we look at this subject of glycosuria in suckling women the more do we become impressed with the feeling that it has been too much neglected by pure physiology, and by practical medicine. To the physiologist the phenomena are those of a comparatively simple experiment going on under fairly ascertainable and controllable conditions. On a given day he has under his observation a healthy woman excreting urine whose exact composition he can ascertain by analysis, and secreting milk whose composition he can also find out. While the woman remains under exactly the same circumstances and influences, the experimenter can withdraw the child, and thus stop the flow of milk. He can then foretell with certainty almost to an hour when the urine will show a change in its composition; and there is still plenty of scope for research in the endeavour to demonstrate qualitatively and quantitatively what constituents in the urine are the equivalents of that which would have passed away as milk.

Nor is the subject devoid of practical interest. Dr. Matthews Duncan says it is not likely to lead to confusion with true diabetes. But in the case from which my inquiry started there was such a reduction as to lead to considerable embarrassment. And when we consider how persistent in some cases the glycosuria is, it does not seem at all improbable that cases of physiological glycosuria have been mistaken for diabetes mellitus. How many practitioners think of trying other tests when they are satisfied that Fehling has proved the presence of sugar? The specific gravity would, perhaps, excite suspicion, but its variation in both glycosuria and diabetes is too great to make it a final test.

It would be interesting to know if the presence of sugar in large amount in the urine of puerperal women, as after still-births, or during lactation just after sudden weaning, voluntarily or otherwise, makes any difference to the healing of wounds. I have had

no opportunity of observing the healing of a lacerated perineum under such circumstances, and it seems the most likely subject for test observations in obstetric practice. In the operation cases mentioned above the course of healing was perfectly normal, but in each case the acute stage of glycosuria had passed before the operation was performed.

In this inquiry we get a clear explanation, if such were necessary, why milk drawn by the infant from over-distended breasts should disagree. The sugar and salts, and no doubt also a portion of the water, have begun to undergo resorption, leaving in the breast a fluid too rich in casein and butter, in short, a kind of cow's milk with its unfavourable points exaggerated. If this be true, the practical conclusion is obvious.—*Medical Chronicle, Jan.*, 1886, *p.* 287.

114.—THERAPEUTIC USES OF HOT WATER, IN REFERENCE TO OBSTETRIC AND GYNÆCOLOGICAL PRACTICE.

By R. Milne Murray, M.A., M.B., Physician for Diseases of Women, Western Dispensary, Edinburgh.

[The following observations on the therapeutic uses of hot water are appended to the account of a series of elaborate experiments undertaken to investigate the physiological effects of water at different temperatures, with special reference to obstetric and gynæcological practice.]

I. With reference to the use of hot water in inflammations. It is evident that in water at 120° F. we have an agent of immense power in controlling the local circulation in an organ, provided we can bring it to bear directly on the part. Accordingly a stream of warm water directed into the vagina cannot fail to effect in a very direct way the circulation in the uterus. The smaller blood-vessels will respond in such a manner that, their calibre becoming narrowed under the stimulating effect, the abnormal blood supply will be to a large extent cut off, and the resulting phenomena of inflammation checked. The use of this agent in pelvic inflammation is now recognised as being of so much importance, and is so much employed by gynæcologists generally, that I do not need to dwell on it. I hope the action which I have shown it to possess, in causing contraction of blood-vessels, may help to convince any who may have had doubts of its efficiency.

II. Its efficiency in promoting the tonic contraction of non-striped muscle at once draws attention to its use as a promoter of uterine action. The conditions in which we seek to excite uterine contraction, when it is deficient or absent, may be divided into two classes:—1. Those in which the contents of the uterus have not yet been expelled. 2. Those in which the proper contents of the

uterus have been expelled, but where the risk of bleeding is imminent from the absence of the natural contraction of the uterus.

1. Its efficiency in the first of these conditions I shall best illustrate by the following case:—In May, 1883, I was called to see a patient whom I found three months pregnant, and in whom profuse hemorrhage and regular pains had been going on for some hours. The patient had had two previous miscarriages, but no living child. On examination, I found the vagina full of clots, the os rather less than a florin, and the ovum could just be reached by the tip of the finger. I made an effort to introduce my finger into the cavity, but even with the patient under chloroform I failed to pass beyond the cervical canal. I resolved to plug the vagina, but before doing so proceeded to wash it out as a precaution against sepsis. The nurse provided me with water just tolerable to the hand. In order to provide against any water entering and distending the uterus, I conveyed the long vaginal tube with my fingers into the posterior fornix, and retained it there while the water was thrown in. After two or three syringefuls had been injected, I found the water so warm that I felt compelled to withdraw my fingers; but just as I was doing so, was surprised to find the entire ovum projected through the os into the vagina, and actually pushed into my palm.

Since that occasion I have had two similar cases in which the douche was equally effective in securing expulsion of the ovum; and in all cases where the abortion is inevitable, where hemorrhage is going on, and the os dilating, I should adopt it as a routine practice. If it should fail, its use in no way prejudices the employment of the plug or the sponge tent, should they be necessary; and should it be effective, as I believe it will be in most cases, the serious risk of sepsis in the use of the plug or tent will be avoided.

2. It is, however, in those cases where, after the contents of the uterus have been expelled, and that organ remains flabby and relaxed, and where hemorrhage is occurring or is imminent, that the value of this agent most appears. I cannot enter fully into the consideration of the question of the use of hot water in postpartum hemorrhage here, but must content myself with a general summary of the advantages which can be claimed for hot water as a uterine hæmostatic.

(1.) *The rapidity of its action.*—The tracings I have shown no less than the results of experience amply bear this out. I am surprised to notice, in a discussion at the American Gynæcological Society two years ago, Dr. F. Barker stated that his chief objection to the use of hot water was its taking twenty minutes to act. Dr. Barker's experience is surely singular in this respect.

(2.) *The duration of the tonus produced.*—This gives time for

the formation of coagula, so that by the time relaxation begins the bleeding sinuses and vessels are plugged securely.

(3.) *The absence of vascular reaction.*—Every one who has employed cold applications to the bleeding uterus must have been struck with the tendency to recurrence of the hemorrhage some time after it has appeared to stop, and the rapidity with which the uterus relaxes and assumes the characteristic doughy feeling. Nothing is more striking in the use of hot water than the persistence of the tonic rigidity of the uterus which follows its employment.

(4.) Further, the remarkable fact which comes out as to the *absence of exhaustion* following its use is one of the most important advantages of hot water. It is undoubted that non-striped muscle will respond to the stimulus of hot water time after time, and with increased vigour, whereas cold water seems to exhaust its contractility almost at once. The importance of this distinction in the event of a recurrence of the hemorrhage cannot well be over-estimated.

(5.) I would now draw attention to the point which is often apt to be overlooked in comparing the values of hot and cold stimuli. It is almost inconceivable how great must be the violence of the shock which the exhausted system suffers from the immense loss of natural heat which accompanies every application of cold to the mucous membrane of the vagina or uterus.

What could be better calculated to extinguish the last flickerings of vitality than the drenching of an extensive vascular surface with a stream of ice-cold water? On the other hand, the hot application, while doing all, and much more, than the cold to check hemorrhage and excite contraction, will add to the exhausted system much of that essential heat which has been lost in the escape of the heat-distributing fluid. Were the values of the two applications equal in every way but this, this alone, in my opinion, would place hot applications incomparably above the other in therapeutic efficiency.

III. In the last place, I refer in a word to the value of hot stimuli in checking hemorrhage in other parts of the body.

In plastic operations about the vagina and perineum its value in checking oozing has been long recognised by gynæcologists, and I am often surprised that in plastic operations about the face and elsewhere, surgeons do not avail themselves of this means of saving their patients much blood and themselves much trouble.

Lastly, in hemorrhage from the stomach, *e.g.*, gastric ulcers, I am convinced that better results by far would be obtained by making the patient sip or drink water at 120° to 140° than by the use of ice, or mineral or vegetable astringents.—*Edinburgh Med. Journal, Sept.* 1886, *p.* 221.

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ERRATUM.—The article in Synopsis, "Cystic Disease of Breast," has in mistake been printed under System Generally instead of Diseases of Women.

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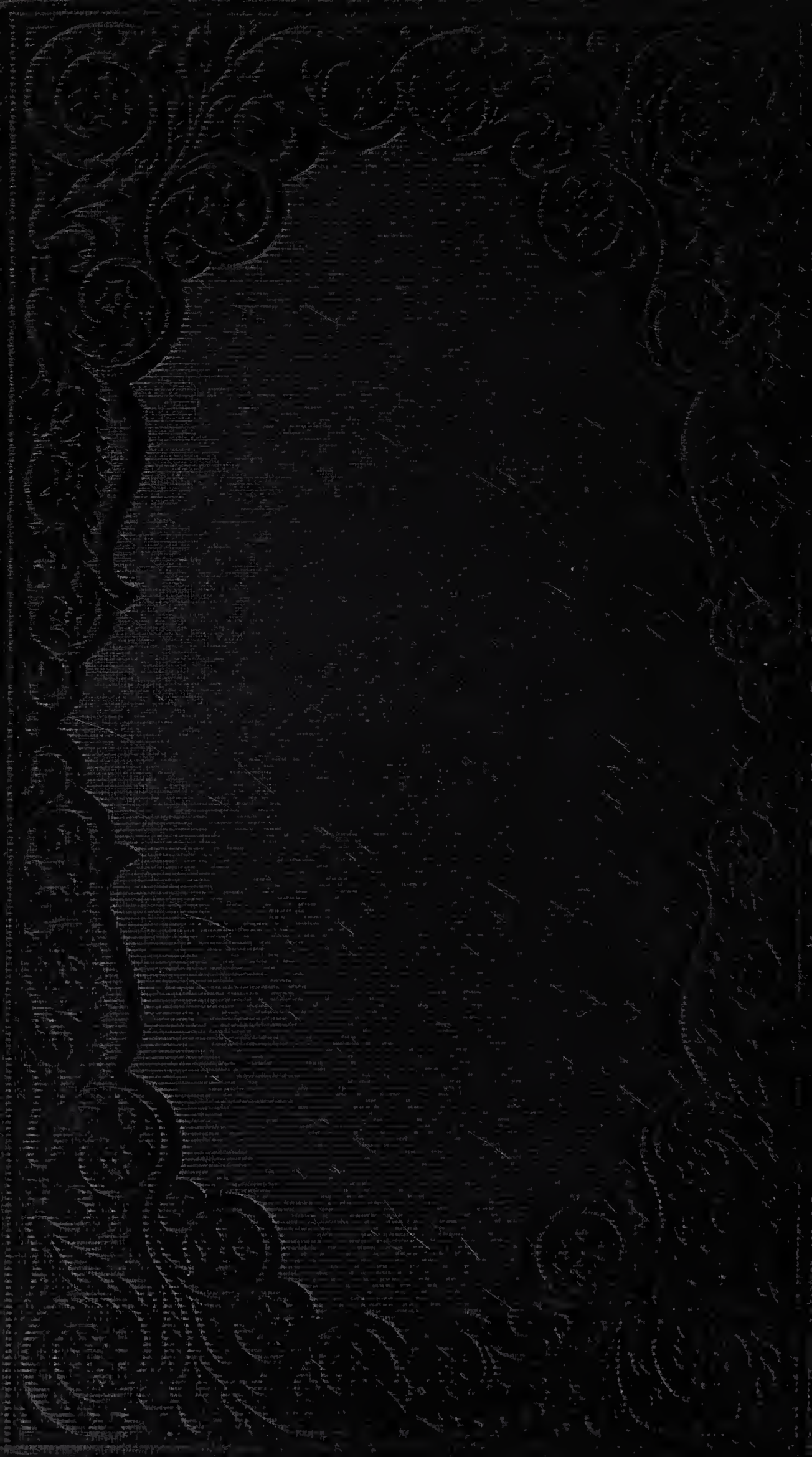
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